

MATERIAL SAFETY DATA SHEET

prepared in accordance with COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Official Journal of the European Union No L 203, 26/06/2020)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND IDENTIFICATION ENTERPRISES

1.1 Product ID

CLEANSER PCC 15

UFI number: 3D10-200A-C009-EFR3

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

Identified uses: Preparation for cleaning printed circuits.

Uses advised against: None known.

1.3 Details of the supplier of the safety data sheet

Supplier:

Micro Chip Electronic Barbara Kaczmarczyk ul.

Kochanowskiego 9

40-035 Katowice

Phone +48 503 017 712

E-mail of the person responsible for the safety data sheet: info@micro-chip.pl

1.4 Emergency telephone number

Emergency number in Poland (open 9:00-15:00): + 48 503 017 712

Date of preparation: 02/06/2023

SECTION 2: HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 as amended:

Flammable liquids, hazard category 2 (Flam. Liq. 2)

Highly flammable liquid and vapour. (H225)

Serious eye damage/eye irritation, hazard category 2 (Eye Irrit. 2)

Causes serious eye irritation. (H319)

Reproductive toxicity, hazard category 2 (Repr. 2)

Suspected of damaging fertility. (H361f)

Specific target organ toxicity – single exposure, hazard category 3, narcotic effects (STOT SE 3)

May cause drowsiness or dizziness. (H336)

Posing a hazard to the aquatic environment – chronic hazard, category 3 (Aquatic Chronic 3)

Harmful to aquatic life with long lasting effects. (H412)

Health hazards:

In case of significant concentrations of vapors or direct contact of the product with the eyes, irritation, redness, tearing, burning, conjunctivitis may occur. Contamination of the skin with a large amount of the product may cause redness, itching and dryness of the skin. Inhalation of vapors in high concentrations causes pain and dizziness.

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headaches, nausea, shortness of breath, respiratory disorders, impaired consciousness, loss of consciousness. After ingestion, irritation of the gastrointestinal mucosa, nausea, vomiting and diarrhea may occur. It is suspected of having a harmful effect on fertility.

Effects on the environment:

Harmful to aquatic life with long lasting effects.

Effects related to physicochemical properties:

Product vapors are heavier than air, they can create explosive mixtures with air. They accumulate near the ground and in the lower parts of rooms. Containers exposed to fire or high temperatures may explode.

2.2 Labeling elements

Pictograms:



Signal Word: **Danger**

Hazard statements:

H225 - Highly flammable liquid and vapour.
 H319 - Causes serious eye irritation.
 H336 - May cause drowsiness or dizziness.
 H361f - Suspected of damaging fertility.
 H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements:

P102 - Keep out of reach of children.
 P308+P313 - IF exposed or concerned: Get medical advice/attention.
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P261 - Avoid breathing vapours.
 P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P273 - Avoid release to the environment.

Additional labeling requirements:

Contains: Propan-2-ol, 1-methoxypropan-2-ol, n-hexane.

2.3 Other threats

The mixture does not meet the PBT and vPvB criteria. It does not contain any ingredients considered to be endocrine disrupting according to Article 57(f) of the REACH Regulation or Regulation (EU) 2017/2100 or Regulation (EU) 2018/605 at a concentration of 0.1% or higher.

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SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixtures

Product ID: CLEANSER PCC 15

Ingredients of the mixture:

Name of the substance	index number	CAS No.	EC No.	ul. mass in %	Hazard classes and Category Codes	Return codes indicating type threats
Propan-2-ol	603-117-00-0	67-63-0	200-661-7	40	Flam. Liq. 2 Eye Irrit. 2 STOT SE 3	H225 H319 H336
Ethanol Registration number: 01-2119457610-43-XXXX	603-002-00-5	64-17-5	200-578-6	<30	Flam. Liq. 2 Eye Irrit. 2	H225 H319 <i>Specific</i> <i>concentration limit:</i> Eye Irrit. 2; H319: C y 50%
Dimethoxymethane Registration number: 01-2119664781-31-XXXX	lack	109-87-5	203-714-2	10	Flam. Liq. 2	H225
1-methoxypropan-2-ol Registration number: 01-2119457435-35-XXXX	603-064-00-3	107-98-2	203-539-1	<8	Flam. Liq. 3 STOT SE 3	H226 H336
3-methoxy-3-methylbutan-1-ol Registration number: 01-2119976333-33-XXXX	lack	56539-66-3	260-252-4	4 - <5	Eye Irrit.2	H319
n-Hexane Registration number: 01-2119480412-44-XXXX	601-037-00-0	110-54-3	203-777-6	4 - <5	Flam. Liq. 2 Repr. 2 Asp. Tox. 1 Skin Irrit. 2 STOT SE 3 STOT RE 2 Aquatic Chronic 2	H225 H361f H304 H315 H336 H373 H411 <i>Specific</i> <i>concentration limit:</i> STOT RE 2; H373: C y 5%
Butan-2-one Registration number: 01-2119457290-43-XXXX	606-002-00-3	78-93-3	201-159-0	1 - 2	Flam. Liq. 2 Eye Irrit. 2 STOT SE 3	H225 H319 H336 EUH066

The full text of H phrases and the acronyms of symbols, hazard classes and category codes are given in Section 16 of the Safety Data Sheet.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: Remove the injured person from the place of exposure, place them in a comfortable half-sitting or sitting position, ensure peace, protect against heat loss. If disturbances occur

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	breathing, apply artificial respiration. If symptoms persist, call doctor.
Skin contact:	Rinse immediately with plenty of water, remove contaminated clothing, wash skin with plenty of soap and water. If necessary, consult a doctor.
Eye contact:	Rinse immediately with plenty of lukewarm water, preferably running water, for at least 15 minutes. Remove contact lenses. Avoid strong water jets due to the risk of mechanical damage to the cornea. If irritation persists, consult an ophthalmologist.
Digestive tract:	If a large quantity is swallowed, do not induce vomiting. Rinse mouth with plenty of water. If the victim is conscious, give plenty of water. If necessary, call a doctor.

4.2 Most important acute and delayed symptoms and effects of exposure In case of significant concentrations of vapours or direct contact of the product with the eyes, irritation, redness, tearing, burning, conjunctivitis may occur. Contamination of the skin with a large amount of the product may cause redness, itching and dryness of the skin. Inhalation of vapours in high concentrations causes headache and dizziness, nausea, shortness of breath, respiratory disorders, impaired consciousness, loss of consciousness. After ingestion, irritation of the gastrointestinal mucosa, nausea, vomiting and diarrhea may occur. It is suspected of having a harmful effect on fertility.

4.3 Indications of any immediate medical attention and special treatment for the injured person

No special recommendations. Treat symptomatically. Provide the attending physician with the safety data sheet.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Foam, carbon dioxide, extinguishing powders, water – dispersed currents.

Inappropriate extinguishing media:

Do not use dense streams of water on the surface of the liquid.

5.2 Special hazards arising from the substance or mixture

In case of fire, carbon monoxide and carbon dioxide may be produced.

5.3 Information for the fire brigade

Highly flammable liquid and vapour. Vapours form explosive mixtures with air, are heavier than air and accumulate near the ground and in lower parts of rooms. Cool containers exposed to fire from a safe distance with a sprayed water jet (explosion hazard); if possible, remove them from the endangered area. Gas-tight clothing in antistatic version, insulating respiratory protective equipment.

SECTION 6: MEASURES IN THE EVENT OF ACCIDENTAL ENVIRONMENTAL RELEASES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use protective clothing made of natural materials (cotton) or synthetic fibers, gloves made of nitrile or butyl (thickness 0.4 ÷ 0.05 mm, breakthrough time ÷ 480 min) and safety glasses, such as goggles. Remove sources of ignition (extinguish open flames, announce a ban on smoking and use of

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sparkling tools). Remove unprotected persons and those not involved in the emergency response from the endangered area. Avoid direct contact with the mixture. Avoid inhalation of vapours. 6.2 Environmental precautions

Prevent entry into sewers, surface and ground waters and soil.

6.3 Methods and materials for containment and cleaning up

Secure drains. If possible, eliminate leaks (close liquid supply, seal).

Place damaged packaging in a replacement container. Dilute vapors with a dispersed stream of water.

Remove sources of ignition (extinguish open flames, announce a ban on smoking and use of sparking tools). Absorb small quantities in a chemically inert binding material (sand, diatomaceous earth), transfer to tightly closed containers and send for disposal.

6.4 References to other sections

Dispose of in accordance with the recommendations in section 13.

SECTION 7: HANDLING AND REMEDIES OF SUBSTANCES AND MIXTURES STORAGE

7.1 Precautions for safe handling

Ensure adequate general and local ventilation. Keep away from sources of high temperature and sources of ignition. It is advisable to take precautions to avoid contact with skin and eyes when working with the mixture. Do not inhale vapours.

Prevent from entering sewage system, surface water and groundwater. Do not eat, drink or smoke during use. Wash hands during breaks and after finishing work.

Remove contaminated clothing and wash before re-wearing.

7.2 Conditions for safe storage, including information on any mutual inconsistency

Store in original, properly labeled, tightly closed containers, in a cool, dry, well-ventilated storage room, equipped with explosion-proof electrical and ventilation systems. Store away from sources of high temperature, sources of ignition, oxidizers. Protect from sunlight.

7.3 Specific end use(s)

No information on uses other than those mentioned in section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Legal basis:

Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018, on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws, item 1286, 2018); Regulation of the Minister of Family, Labor and Social Policy of January 9, 2020 amending the regulation on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws, item 61, 2020);

Regulation of the Minister of Development, Labour and Technology of 18 February 2021 amending the regulation on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws, item 325, 2021).

<u>Name of the substance</u>	<u>CAS</u>	<u>Standard</u>	<u>value</u>	<u>unit</u>
Propan-2-ol	No. 67-63-0	NDS	900	mg/m3

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		NDSch	1200	mg/m3
		NDSP	not specified	
		(skin)		
Ethanol	64-17-5	NDS	1900	mg/m3
		NDSch and NDSP not determined		
Dimethoxymethane	109-87-5	NDS	1000	mg/m3
		NDSch	3500	mg/m3
		NDSP	not specified	
1-Methoxypropan-2-ol	107-98-2	NDS	180	mg/m3
		NDSch	360	mg/m3
		NDSP	not designated	
		(skin)		
Hexane	110-54-3	NDS	72	mg/m3
		NDSch and NDSP not determined		
		(skin)		
Butan-2-one	78-93-3	NDS	450	mg/m3
		NDSch	900	mg/m3
		NDSP	not specified	
		(skin)		

The skin notation indicates that absorption of the substance through the skin may be as important as inhalation exposure.

Propan-2-ol:

DNEL values ^{spicy} for employees:

888 mg/kg (skin) - local

Long-term DNEL values for workers:

500 mg/m3 (inhalation) – local DNEL values for the general public: ^{spicy}

319 mg/kg (skin) - local

Long-term DNEL values for the general public:

89 mg/m3 (respiratory) - local PNEC values:

140.9 mg/l (freshwater)

140.9 mg/l (sea water)

552 mg/kg (sediment - fresh and marine water)

28 mg/kg (soil)

Ethanol:

Long-term DNEL values for workers:

380 mg/m3 (respiratory tract) – systemic

Long-term DNEL values for the general public:

114 mg/m3 (respiratory tract) – systemic

PNEC values:

0.96 mg/l (fresh water)

0.79 mg/l (sea water)

580 mg/l (sewage treatment plant)

3.6 mg/kg (sediment - fresh water)

2.9 mg/kg (sediment - sea water)

0.38 g/kg (secondary poisoning)

Dimethoxymethane:

Long-term DNEL values for workers:

126.6 mg/m3 (respiratory tract) – systemic

Long-term DNEL values for workers:

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17.9 mg/kg (skin) – systemic

Long-term DNEL values for general public: 31.5 mg/m³

(inhalation) – systemic

Long-term DNEL values for general population: 18.1 mg/kg

(dermal and oral) – systemic

PNEC values:

15.577 mg/l (freshwater) 1.477

mg/l (marine water) 10 g/l

(sewage treatment plant) 13.135 mg/

kg (sediment - freshwater) 1.313 mg/kg

(sediment - marine water) 4.654 mg/kg

(soil) **1-methoxypropan-2-**

ol:

Long-term DNEL values for workers: 369 mg/m³

(respiratory) - systemic

DNEL values for workers: 553.5 mg/m³

(respiratory) - systemic and local

Long-term DNEL values for workers: 183 mg/kg (skin)

- systemic

Long-term DNEL values for general population: 43.9 mg/m³

(inhalation) – systemic

Long-term DNEL values for general population: 78 mg/kg (skin)

- systemic

Long-term DNEL values for general population: 33 mg/kg (oral)

– systemic

PNEC values: 10

mg/l (freshwater) 1 mg/l

(marine water) 100 mg/l

(sewage treatment plant) 52.3 mg/kg

(sediment - freshwater) 5.2 mg/kg

(sediment - marine water) 4.59 mg/kg

(soil) **3-methoxy-3-**

methylbutan-1-ol:

Long-term DNEL values for workers: 80 mg/m³

(respiratory) - systemic

Long-term DNEL values for workers: 6.25 mg/kg (skin)

- systemic

Long-term DNEL values for general public: 40 mg/m³ (inhalation)

– systemic

Long-term DNEL values for general population: 3.1 mg/kg (skin)

– systemic

Long-term DNEL values for general public: 2.5 mg/kg (oral) –

systemic **n-Hexane:**

Long-term DNEL values for workers: 75 mg/m³

(respiratory) - systemic

Long-term DNEL values for workers: 11 mg/kg (skin) -

systemic

Long-term DNEL values for general population: 16 mg/m³

(inhalation) – systemic

Long-term DNEL values for general population: 5.3 mg/kg (skin)

– systemic

Long-term DNEL values for the general public:

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4 mg/kg (oral route) – systemic

Butan-2-one:

Long-term DNEL values for workers:

600 mg/m³ (respiratory tract) – systemic

DNEL values spicy for employees:

900 mg/m³ (respiratory tract) – systemic

Long-term DNEL values for workers:

1161 mg/kg (skin) – systemic

Long-term DNEL values for the general public:

106 mg/m³ (respiratory tract) – systemic

DNEL values 450 spicy for the general public:

mg/m³ (respiratory) - systemic

Long-term DNEL values for the general public:

412 mg/kg (skin) – systemic

Long-term DNEL values for the general public:

31 mg/kg (oral route) – systemic

8.2 Exposure Control

8.2.1 Appropriate technical control measures

Local exhaust ventilation to remove vapors from their emission points and general room ventilation are required. Local ventilation intake openings at the work surface or below. General ventilation exhausts at the top of the room and at the floor. Ventilation systems must meet the conditions established with regard to the risk of fire or explosion. Do not use near sources of high temperature and sources of ignition. In the event of insufficient ventilation, use respiratory protection. Provide an eyewash station.

8.2.2 Individual protection measures, such as personal protective equipment

Respiratory tract: If the permissible concentrations of product vapours are exceeded, respiratory protection with a particle filter marked in white and the symbol P2 and a vapour filter marked in brown and the letter A should be used.

use complex AP filters.

Hands and skin:

When handling large quantities, use protective clothing made of natural materials (cotton) or synthetic fibers, gloves made of nitrile or butyl (thickness 0.4 ÷ 0.05 mm, breakthrough time ÷ 480 min).

Eyes:

Wear protective glasses such as goggles.

Occupational hygiene: General industrial hygiene regulations apply. Do not exceed permissible normative concentrations in the workplace environment. After finishing work, remove contaminated clothing. Before breaks in work, wash hands and face. After work, wash the whole body thoroughly. Do not eat, drink, or smoke while working.

8.2.3 Environmental exposure controls

Prevent entry into watercourses.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) State of matter:

Liquid.

b) Colour

Colourless.

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c) Odor
Alcoholic. d)
Melting point/freezing point No data available.
e) Boiling point or initial boiling
point and boiling range
> 35 °C.
f) Flammability of materials
Flammable mixture. g)
Lower and upper explosion limits For propan-2-ol:
Upper: 12 % vol.

Lower: 2% vol. h)
Flash point < 23 °C

i) Autoignition temperature No data
available. j) Decomposition
temperature No data available.
k) pH Not

determined. l) Kinematic
viscosity
No data available. m) Solubility
Soluble in water. n) Partition
coefficient n-octanol/water (log
coefficient value)
No data available. o) Vapour
pressure No data
available. p) Density or relative
density No data available.

q) Relative vapour density >1
(air=1) r) Particle
characteristics Not applicable.

9.2 Other information

9.2.1. Information on physical hazard classes a) Explosives:

Not applicable. b) Flammable gases:
Not applicable. c) Aerosols: Not
applicable. d) Oxidizing
gases: Not applicable. e) Gases
under pressure: Not applicable. f)
Flammable liquids: Flam. Liq. 2; Highly flammable liquid and
vapour. g) Flammable solids: Not
applicable. h) Self-reactive substances and mixtures:
Not applicable. i) Pyrophoric liquids: Not
applicable. j) Pyrophoric solids: Not
applicable. k) Self-heating substances and mixtures: Not
applicable. l) Substances and mixtures which in contact with water emit flammable
gases: Not applicable. m) Oxidizing liquids:
Not applicable. n) Oxidizing solids: Not
applicable. o) Organic peroxides:
Not applicable. p) Corrosive to metals: Not applicable.

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q) Desensitized explosives: Not applicable.

9.2.2. Other safety features

- a) mechanical sensitivity: No data available.
- b) self-accelerating polymerization temperature: No data available.
- c) formation of explosive dust/air mixtures: Not applicable.
- d) acid/base reserve: No data available.
- e) evaporation rate: No data available.
- f) miscibility: miscible with water.
- g) Conductivity: No data available.
- h) corrosive effect: No data available.
- i) gas group: Not applicable.
- j) redox potential: No data available.
- k) radical formation potential: No data available.
- l) photocatalytic properties; No data available.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

When stored and handled as intended – no reactivity.

10.2 Chemical stability

Under normal conditions of use and storage the product is stable.

10.3 Possibility of hazardous reactions

Product vapors with air may form explosive mixtures.

10.4 Conditions to avoid

Ignition sources, open flames, heat, direct sunlight.

10.5 Incompatible Materials

Strong oxidizers.

10.6 Hazardous decomposition products

They are not known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity:

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

Ingredient Dose Propan-2-ol CAS No. – oral route rat DL50 –

skin rabbit CL50 – respiratory route	67-63-0	DL50 – oral route rat DL50 – skin rabbit CL50 – respiratory route rat	value	unit.
			>5000	mg/kg
			>5000	mg/kg
			>5	mg/l
Ethanol	64-17-5	DL50 – oral route DL50 – skin rabbit CL50 – respiratory route rat DL50 – oral route rat DL50 – skin rabbit	7060	mg/kg
			>20000	mg/kg

1-methoxypropan-2-ol 107-98-2

>8000 mg/l (4h)
>2000-5000 mg/kg

n-Hexane 110-54-3

>2000mg/kg
>25 mg/l
16000mg/kg
>3350 mg/kg

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Butan-2-one	78-93-3	CL50 – Rat respiratory tract	>259	g/m3 (4h)
		DL50 – oral route rat	>2000	mg/kg
		DL50 – rat skin	>2000	mg/kg

Skin corrosion/irritation: _____

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

Serious eye damage/eye irritation: _____

Irritating to eyes.

Respiratory or skin sensitisation: _____

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

Mutagenic effect on germ cells: _____

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

Carcinogenicity: _____

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

Reproductive toxicity: _____

Suspected of damaging fertility.

Specific target organ toxicity – single exposure: _____

May cause drowsiness or dizziness.

Specific target organ toxicity – repeated exposure: _____

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

Aspiration hazard: _____

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

11.2 Information about other threats

11.2.1. Endocrine disrupting properties

Does not contain ingredients that are considered to disrupt the functioning of the endocrine system in accordance with Art.

57(f) of the REACH Regulation or Regulation (EU) 2017/2100 or Regulation (EU) 2018/605 at a concentration of 0.1% or higher.

11.2.2. Other information

No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

<u>Component</u>	<u>CAS-No.</u>	<u>Dose</u>	<u>value</u>	<u>unit.</u>
Propan-2-ol	67-63-0	CL50 – fish (<i>Pimephales promelas</i>)	9640-11130	mg/l (96h)
		CL50 – fish (<i>Carassius auratus</i>)	> 5000	mg/l (24h)
		CL50 – fish (<i>Leuciscus idus melanotus</i>)	8970-9280	mg/l (48h)
		CE50 – invertebrates (<i>Daphnia magna</i>)	> 10000	mg/l (24h)
		CE50 – algae (<i>Scenedesmus subspicatus</i>)	> 1000	mg/l (72h)
		CE50 – bacteria (<i>Pseudomonas putida</i>)	1050	mg/l (16h)
		CE50 – protozoa (<i>Entosiphon sulcatum</i>)	4930	mg/l (72h)
Ethanol	64-17-5	CL50 – fish	8140	mg/l (48h)
		CE50 – invertebrates (<i>Daphnia magna</i>)	> 7800	mg/l (48h)
		CE50 – algae	5000	mg/l (72h)
Dimethoxymethane	109-87-5	EC50 – invertebrates (<i>Daphnia magna</i>) 1-	> 1200	mg/l (48h)
		methoxypropan-2-ol 107-98-2 CL50 – fish (<i>Pimephales promelas</i>)	20800	mg/l (96h)
		CL50 – fish (<i>Oncorhynchus mykiss</i>)	ÿ 1000	mg/l (96h)
		CL50 – fish (<i>Leuciscus idus melanotus</i>)	6812	mg/l (96h)
		CL50 – invertebrates (<i>Daphnia magna</i>)	21100-25900	mg/l (48h)

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		CEr50 – algae (<i>Pseudokirchneriella subspitata</i>) 1000	mg/l (7 days)
3-methoxy-3-methylbutan-1-ol			
	56539-66-3	CL50 – fish (<i>Oryzias latipes</i>)	>100 mg/l (96h)
		CE50 – invertebrates (<i>Daphnia magna</i>)	> 10000 mg/l (48h)
		NOEC – invertebrates (<i>Daphnia magna</i>)	100 mg/l (21 days)
		NOEC – algae (<i>Pseudokirchneriella subspitata</i>) 1000	mg/l (72h)
		CEr50 – algae (<i>Pseudokirchneriella subspitata</i>) >1000	mg/l (72h)
		CE50 – microorganisms >1000	mg/l (3h)
		CE50 – protozoa (<i>Entosiphon sulcatum</i>)	4930 mg/l (72h)
n-Hexane	110-54-3	NOELR – fish (<i>Oncorhynchus mykiss</i>)	2.8 mg/l (28 days)
		NOELR – invertebrates (<i>Daphnia magna</i>)	4.888 mg/l (21 days)
		LL50 – algae	12.51 mg/l (96h)
		LE50 – invertebrates (<i>Daphnia magna</i>)	21.85 mg/l (48h)
		LE50 – algae	9.285 mg/l (72h)
Butan-2-one	78-93-3	CL50 - fish (<i>Leuciscus idus</i>)	>100 mg/l (48h)
		CE50 – invertebrates (<i>Daphnia magna</i>)	> 100 mg/l (48h)
		CE50 – algae (<i>Desmodesmus subspicatus</i>)	> 100 mg/l (7 days)

12.2 Persistence and degradability

Propan-2-ol: readily biodegradable (> 70 % after 10 days; > 95 % after 28 days, OECD 301 E).

Ethanol: readily biodegradable 1-

methoxypropan-2-ol: readily biodegradable (96% after 28 days)

3-methoxy-3-methylbutan-1-ol: readily biodegradable (100% after 28 days OECD302C; 78.9% after 28 days, OECD 310).

n-hexane: easily biodegradable

Butan-2-one: readily biodegradable

12.3 Bioaccumulative potential

Octanol/water partition coefficient (log Ko/w): No data available for the mixture.

Propan-2-ol: 0.05 (low bioaccumulation potential)

Ethanol: 0.32 (non-bioaccumulative)

1-methoxypropan-2-ol: 0.37 (not expected to bioaccumulate)

3-methoxy-3-methylbutan-1-ol: 0.18

Bioconcentration factor (BCF): No data available for the mixture.

12.4 Mobility in soil

No data available for the mixture.

12.5 Results of PBT and vPvB assessment

The mixture does not meet the PBT and vPvB criteria.

12.6 Endocrine disrupting properties

Does not contain ingredients that are considered to disrupt the functioning of the endocrine system in accordance with Art.

57(f) of the REACH Regulation or Regulation (EU) 2017/2100 or Regulation (EU) 2018/605 at a concentration of 0.1% or higher.

12.7 Other harmful effects

No data available.

SECTION 13: WASTE CONSIDERATIONS

13.1 Waste disposal methods

Do not dispose of the product together with municipal waste, do not introduce it into the sewage system. Do not allow contamination of ground and surface water.

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Hazardous waste*: _____

HP 3 "Flammable"

HP 4 "Irritating"

HP 5 "Specific Target Organ Toxicity (STOT)"

HP 10 "Toxic to reproduction"

**COMMISSION REGULATION (EU) No 1357/2014 of 18 December 2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives (Official Journal of the EU, L.365, December 2014).*

Empty used packaging thoroughly. Disposable packaging (after thorough cleaning) should be sent for recycling.

Special precautions: _____

Dispose of the product and its packaging safely. Be careful when handling empty containers that have not been thoroughly cleaned. Vapours from product residues may create a flammable or explosive atmosphere inside the container. Do not cut or weld used containers unless have been thoroughly cleaned.

Legal basis: _____

Announcement of the Speaker of the Sejm of the Republic of Poland of 3 March 2022 on the announcement of the consolidated text of the Act on Waste (Journal of Laws, item 699, 2022).

Announcement of the Speaker of the Sejm of the Republic of Poland of 1 December 2022 on the announcement of the uniform text of the act on the management of packaging and packaging waste (Journal of Laws, item 160, 2023)

REGULATION OF THE MINISTER OF CLIMATE of 2 January 2020 on the waste catalogue (Journal of Laws, item 10, 2020).

SECTION 14: TRANSPORT INFORMATION

ADR/RID, IMDG, IATA

14.1 UN number or ID number

1993

14.2 UN proper shipping name

FLAMMABLE LIQUID MATERIAL NOS

14.3 Transport hazard class(es)

3

14.4 Packing group

II

14.5 Environmental hazards

The product does not pose a hazard to the environment according to the criteria of the UN Model Regulations.

14.6 Special precautions for users

Always transport in closed containers that are upright and properly secured. Make sure that those transporting the product know what to do in the event of a failure or spill.

14.7 Bulk sea transport in accordance with IMO instruments

Not applicable.

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26/06/2020)

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental protection regulations specific to mixtures

ANNOUNCEMENT OF THE MARSHAL OF THE SEJM OF THE REPUBLIC OF POLAND of 22 July 2022 on the announcement of the uniform text of the act on chemical substances and their mixtures (Journal of Laws, item 1816, 29/08/2022).

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Official Journal of the European Union, series L, No 353 of 31 December 2008) with subsequent amendments (adaptations to technical progress 1 - 18 ATP).

REGULATION (EU) 2016/425 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC (Official Journal of the EU, series L/81 of 31.03.2016).

Regulation of the Minister of Family, Labor and Social Policy of June 12, 2018 on the maximum permissible concentrations and intensities of harmful health factors in the work environment (Journal of Laws, item 1286, 2018)

REGULATION OF THE MINISTER OF FAMILY, LABOUR AND SOCIAL POLICY of 9 January 2020 amending the regulation on the maximum permissible concentrations and intensities of harmful factors for health in the work environment (Journal of Laws item 61, 2020)

Regulation of the Minister of Development, Labor and Technology of February 18, 2021 amending the regulation on the maximum permissible concentrations and intensities of factors harmful to health in the work environment (Journal of Laws, item 325, 2021).

NOTICE OF THE MINISTER OF HEALTH of February 6, 2023 on the announcement of the uniform text of the regulation of the Minister of Health on tests and measurements of factors harmful to health in the work environment (Journal of Laws, item 419, 2023).

Announcement of the Minister of Health of 9 September 2016 on the announcement of a uniform text of the regulation of the Minister of Health on occupational health and safety related to the presence of chemical factors in the workplace (Journal of Laws, item 1488, 2016)

Government Statement of 26 July 2005 on the entry into force of amendments to Annexes A and B of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) concluded in Geneva on 30 September 1957 (Journal of Laws No. 178, item 1481, 2005 with subsequent amendments).

Announcement of the Speaker of the Sejm of the Republic of Poland of 3 March 2022 on the announcement of the consolidated text of the Act on Waste (Journal of Laws, item 699, 2022).

Announcement of the Speaker of the Sejm of the Republic of Poland of 1 December 2022 on the announcement of the uniform text of the act on the management of packaging and packaging waste (Journal of Laws, item 160, 2023)

REGULATION OF THE MINISTER OF CLIMATE of 2 January 2020 on the waste catalogue (Journal of Laws, item 10, 2020).

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Official Journal of the European Union, series L, No 396 of 30 December 2006, as amended).

Regulation (EC) No 273/2004 of the European Parliament and of the Council of 11 February 2004 on drug precursors with subsequent amendments (OJ L 47, 18.2.2004, p. 1-10, special Polish edition: Chapter 15 Volume 008 P. 46 – 56).

15.2 Chemical safety assessment

The supplier did not perform a chemical safety assessment of the mixture.

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SECTION 16: OTHER INFORMATION

The card was developed in the **Łukasiewicz Research Network - the Institute of Industrial Chemistry named after Professor Ignacy Mościcki in Warsaw** based on the recipe and ingredient safety data sheets.

The information provided in the safety data sheet is intended to describe the product only from the point of view of safety requirements. The user is responsible for creating conditions for safe use of the product and it is the user who takes responsibility for the consequences resulting from improper use of this product.

Other recipes:

Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC) as amended - none of the ingredients are listed

Regulation 1005/2009/EC on substances that deplete the ozone layer - none of the ingredients are listed

Regulation 2010/75/EC on persistent organic pollutants (POPs) as amended - none of the ingredients are listed.

List of substances subject to authorisation (REACH, Annex XIV)/SVHC-candidate list - none of the ingredients are listed.

List of restricted substances (REACH, Annex XVII) - none of the ingredients are listed.

Regulation 273/2004 on drug precursors as amended - Butan-2-one (CAS 78-93-3): category 3

REGULATION OF THE MINISTER OF DEVELOPMENT of 29 January 2016 on the types and quantities of hazardous substances present in a plant, which determine whether the plant is classified as one with an increased or high risk of a serious industrial accident (Journal of Laws, 2016, item 138) –

Propan-2-ol (CAS 67-63-0); Ethanol (CAS 64-17-5), Dimethoxymethane (CAS 109-87-5), 1-methoxypropan-2-ol (CAS 107-98-2), Butan-2-one (CAS 78-93-3): category P5a, P5b, P5c (increased-risk establishment – 10 tonnes/year for P5a; 50 tonnes/year for P5b; 5000 tonnes/year for P5c; high-risk establishment – 50 tonnes/year for P5a; 200 tonnes/year for P5b; 50000 tonnes/year for P5c)

n-Hexane (CAS 110-54-3): category P5a, P5b, P5c (increased-risk establishment – 10 tons/year for P5a; 50 tons/year for P5b; 5000 tons/year for P5c; high-risk establishment – 50 tons/year for P5a; 200 tons/year for P5b; 50000 tons/year for P5c) category E2 (increased-risk establishment – 200 tons/year; high-risk establishment – 500 tons/year)

H phrases and acronyms of symbols, hazard classes and category codes **used in Section 3. Safety data sheets:**

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airway.
H315	Irritating to skin.
H319	Irritating to eyes.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

Flam. Liq. 2	Flammable liquids, hazard category 2.
Asp. Tox. 1	Aspiration Hazard Category 1.
Skin Irrit. 2	Skin corrosion/irritation, hazard category 2.
Eye Irrit. 2	Serious eye damage/eye irritation, hazard category 2.

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STOT SE 3 Specific target organ toxicity – single exposure, hazard category 3, narcotic effect.

Repr. 2 Reproductive toxicity, hazard category 2.

STOT RE 2 Specific target organ toxicity – repeated exposure, hazard category 2.

Aquatic Chronic 2 Posing a hazard to the aquatic environment – chronic hazard, category 2.

Classification method:

Flam. Liq. 2; H225 - based on flash point and boiling point data

Eye Irrit. 2; H319 – additive method

Repr. 2; H361f - based on generic concentration limit

STOT SE 3; H336 - based on generic concentration limit

Aquatic Chronic 3; H412 - method of summing the concentrations of classified ingredients

Abbreviations:

OEL - The highest permissible concentration at the workplace - the highest permissible weighted average concentration, the impact of which on an employee during an 8-hour working time, throughout his entire professional activity, should not cause any changes in his health or in the health of his future generations

OELCh - Maximum allowable momentary concentration - the highest allowable momentary concentration established as average value that should not cause negative changes in the health of the employee or his future generations if it is maintained in the work environment for no longer than 30 minutes during a work shift

NDSP - concentration value which cannot be exceeded at any time in the work environment due to a threat to the health or life of an employee

vPvB - Very persistent and very bioaccumulative substance

PBT - Persistent, Bioaccumulative and Toxic

DL50 – Lethal dose – a dose at which 50% of the tested animals die within a specified time period.

CL50 – Lethal concentration - concentration at which 50% of the tested animals die within a specified time period.

CE50 – Effective concentration – effective concentration of a substance causing a response of 50% of the maximum value

ATE – Acute Toxicity Estimate

DNEL - No Harmful Effect Level for Human Health - exposure level substances that do not cause harmful effects on human health

PNEC - Predicted No Effect Concentration - the concentration of a substance below which no harmful effects on the environment are expected

OECD - Organisation for Economic Co-operation and

Development BCF - Bioconcentration factor (bioconcentration) - the ratio of the concentration of a substance in an organism to its concentration in water at equilibrium

ADR - European agreement concerning the international carriage of dangerous goods by road (English)

Agreement on Dangerous Goods by Road

RID – Regulations Concerning the International Transport of Dangerous Goods by Rail

IMDG – International *Maritime Dangerous Goods Code*

IATA - International Air Transport Association *International Air Transport Association*)

IMO - International Maritime Organization

CAS – the number assigned to a chemical substance in the *Chemical Abstracts Service* inventory

EC - reference number used in the European Union to identify dangerous substances, in particular those registered in the European Inventory of Existing Commercial Chemical Substances

(*EINECS – European Inventory of Existing Chemical Substances*), or in the European List of Notified Chemical Substances ELINCS , or

list of chemicals mentioned in the publication "*No-longer polymers*"

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UN number – a four-digit identification number of a material in the UN Hazardous Materials Inventory, derived from the UN Model Regulations, to which an individual material, mixture or article is classified

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