Martellato

Safety Data Sheet dated 29/8/2022, version 2

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

1.1. Product identifier

Mixture identification:

Trade name: PEARL SPRAY HYDROALCOHOLIC SILVER 100 ML

Trade code: 40LCS219

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

Recommended use:

Spray dye alcohol-based for decoration of confectionery and bakery purposes.

PROFESSIONAL USE.

Uses advised against:

Do not use for purposes other than those listed.

1.3. Details of the distributor of the safety data sheet

Martellato srl

Via Rovigo, 1/b – 35010

Vigonza (Pd) – Italy

tel.: +39 049 7800155

fax.: +39 049 8087744

Competent person responsible for the safety data sheet:

martellato@martellato.com

1.4. Emergency telephone number

Company tel. Number: +39 049 7800155 (8.30-12.30; 14-18)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixtures is a food stuff in the finished state, intended for the final user and therefore exempted from the Reg. (EC) 1272/2008 (CLP) according to Art. 1(5)(e). This CLP classification refers only to the physical hazards.

EC regulation criteria 1272/2008 (CLP)

Aerosols 1, H222, H229 Extremely flammable aerosol. Pressurized container: may burst if heated.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:

Danger

Hazard statements:

H222, H229 Extremely flammable aerosol. Pressurized container: may burst if heated.

Precautionary statements:

P102 Keep out of reach of children.

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.

Special Provisions:

None

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1%

Other Hazards:

No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
17 - 64 %	butane	Index number: 601-004-00-0 CAS: 106-97-8 EC: 203-448-7 REACH No.: 01-2119474691-32	2.2/1A Flam. Gas 1A H220 2.5 Press. Gas H280
15 - 30 %	ethanol; ethyl alcohol	Index number: 603-002-00-5 CAS: 64-17-5 EC: 200-578-6 REACH No.: 01-2119457610-43	2.6/2 Flam. Liq. 2 H225 3.3/2 Eye Irrit. 2 H319 Specific Concentration Limits: C >= 50%: Eye Irrit. 2 H319
5 – 42 %	isobutane	Index number: 601-004-00-0 CAS: 75-28-5 EC: 200-857-2 REACH No.: 01-2119485395-27	2.2/1A Flam. Gas 1A H220 2.5 Press. Gas H280
1.5 - 12 %	propane	Index number: 601-003-00-5 CAS: 74-98-6 EC: 200-827-9 REACH No.: 01-2119486944-21	2.2/1A Flam. Gas 1A H220 2.5 Press. Gas H280
< 1.15 %	ethane	Index number: 601-002-00-X CAS: 74-84-0 EC: 200-814-8 REACH No.: 01-2119486765-21	2.2/1A Flam. Gas 1A H220 2.5 Press. Gas H280

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Wash with plenty of water and soap.

In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice, if irritation occurs.

In case of Ingestion:

Food stuff. OBTAIN A MEDICAL EXAMINATION if you feel unwell.

In case of Inhalation:

Remove casualty to fresh air. OBTAIN A MEDICAL EXAMINATION if you feel unwell.

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

No data available for the mixture. See section 11 for symptoms and effects of the substances.

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

Treatment:

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

In case of fire, use a CO_2, dry powder or alcohol-resistant foam fire extinguisher to extinguish.

Water spray jet.

Extinguishing media which must not be used for safety reasons:

Water jets.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.
Remove all sources of ignition.
Remove persons to safety.
See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
See also section 8 for recommended protective equipment.
Advice on general occupational hygiene:
Contamined clothing should be changed before entering eating areas.
Do not eat or drink while working.

7.2. Conditions for safe storage, including any incompatibilities

Do not expose to temperatures exceeding 50 °C.
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Keep away from food, drink and feed.
Incompatible materials:
See subsection 10.5
Instructions as regards storage premises:
Cool and adequately ventilated.

7.3. Specific end use(s)

See section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

butane - CAS: 106-97-8

- OEL Type: NIOSH REL - TWA(10h): 1900 mg/m3, 800 ppm - Notes: United States, 10/2016
- OEL Type: OSHA PEL - TWA(8h): 1900 mg/m3, 800 ppm - Notes: United States, 3/1989
- OEL Type: MAK - TWA: 1600 mg/m3, 800 ppm - STEL: 3800 mg/m3, 1600 ppm - Notes: Austria
- OEL Type: VLEP - STEL(15 min): 2370 mg/m3, 980 ppm - Notes: Belgium
- OEL Type: TLV - TWA: 1200 mg/m3, 500 ppm - STEL: 2400 mg/m3, 1000 ppm - Notes: Denmark
- OEL Type: HTP - TWA: 1900 mg/m3, 800 ppm - STEL(15 min): 2400 mg/m3, 100 ppm - Notes: Finland
- OEL Type: VLE - TWA: 1900 mg/m3, 800 ppm - Notes: France
- OEL Type: AGS - TWA: 2400 mg/m3, 1000 ppm - STEL(15 min): 9600 mg/m3, 4000 ppm - Notes: Germany
- OEL Type: VLA - TWA: 1935 mg/m3, 800 ppm - Notes: Spain
- OEL Type: WEL - TWA: 1450 mg/m3, 600 ppm - STEL: 1810 mg/m3, 750 ppm - Notes: United Kingdom
- OEL Type: ACGIH - STEL: 1000 ppm
- OEL Type: TLV - TWA: 1900 mg/m3, 800 ppm - Notes: Australia
- OEL Type: TLV - STEL(15 min): 1000 ppm - Notes: Canada - Ontario
- OEL Type: TLV - TWA: 1900 mg/m3, 800 ppm - Notes: Canada - Québec
- OEL Type: TLV - STEL(15 min): 1000 ppm - Notes: Ireland
- OEL Type: TLV - TWA: 2350 mg/m3 - STEL: 9400 mg/m3 - Notes: Hungary
- OEL Type: JSOH - TWA: 1200 mg/m3, 500 ppm - Notes: Japan
- OEL Type: DFG - TWA: 2400 mg/m3, 1000 ppm - STEL(15 min): 9600 mg/m3, 4000 ppm - Notes: Germany
- OEL Type: TLV - TWA: 300 mg/m3 - Notes: Lithuania
- OEL Type: TLV - TWA: 1900 mg/m3, 800 ppm - Notes: New Zealand
- OEL Type: TLV - TWA: 1900 mg/m3 - STEL: 3000 mg/m3 - Notes: Poland
- OEL Type: TLV - TWA: 1900 mg/m3, 800 ppm - Notes: Singapore
- OEL Type: TLV - TWA: 1900 mg/m3, 800 ppm - Notes: South Korea

- OEL Type: TLV - TWA: 1900 mg/m3, 800 ppm - Notes: Switzerland

ethanol; ethyl alcohol - CAS: 64-17-5

- OEL Type: WEL - TWA: 1920 mg/m3, 1000 ppm - Notes: United Kingdom
- OEL Type: MAK - TWA: 1900 mg/m3, 1000 ppm - STEL: 3800 mg/m3, 2000 ppm - Notes: Austria
- OEL Type: MAK - TWA: 380 mg/m3, 200 ppm - STEL(15 min): 1520 mg/m3, 800 ppm - Notes: Germany
- OEL Type: WEL - STEL(15 min): 1000 ppm - Notes: Ireland
- OEL Type: VLEP - TWA: 1900 mg/m3, 1000 ppm - STEL: 9500 mg/m3, 5000 ppm - Notes: France
- OEL Type: VLA - STEL: 1910 mg/m3, 1000 ppm - Notes: Spain
- OEL Type: VLEP - TWA: 1907 mg/m3, 1000 ppm - Notes: Belgium
- OEL Type: TLV - TWA: 1900 mg/m3, 1000 ppm - STEL: 3800 mg/m3, 2000 ppm - Notes: Denmark
- OEL Type: HTP - TWA: 1900 mg/m3, 1000 ppm - STEL(15 min): 2500 mg/m3, 1300 ppm - Notes: Finland
- OEL Type: OEL - TWA: 1000 mg/m3, 500 ppm - STEL(15 min): 1900 mg/m3, 1000 ppm - Notes: Sweden
- OEL Type: OEL - TWA: 260 mg/m3 - STEL: 1900 mg/m3 - Notes: The Netherlands
- OEL Type: OEL - TWA: 1900 mg/m3 - STEL: 7600 mg/m3 - Notes: Hungary
- OEL Type: OEL - TWA: 1900 mg/m3 - Notes: Poland
- OEL Type: VLEP - TWA: 1900 mg/m3, 1000 ppm - STEL(15 min): 9500 mg/m3, 5000 ppm - Notes: Romania
- OEL Type: MAK - TWA: 960 mg/m3, 500 ppm - STEL: 1920 mg/m3, 1000 ppm - Notes: Switzerland
- OEL Type: TWA - TWA: 1000 ppm - Notes: Portugal
- OEL Type: TLV - TWA: 950 mg/m3, 500 ppm - STEL: 1187.5 mg/m3, 625 ppm - Notes: Norway
- OEL Type: OEL - TWA: 1900 mg/m3, 1000 ppm - Notes: Greece
- OEL Type: OEL - TWA: 1000 mg/m3 - STEL: 3000 mg/m3 - Notes: Czech Republic
- OEL Type: TLV-ACGIH - STEL: 1884 mg/m3, 1000 ppm
- OEL Type: ACGIH - STEL: 1000 ppm

isobutane - CAS: 75-28-5

- OEL Type: VLEP - TWA: 1000 ppm - STEL(15 min): 2370 mg/m3, 980 ppm - Notes: BELGIUM
- OEL Type: AGW - TWA(8h): 2400 mg/m3, 1000 ppm - STEL(15 min): 9600 mg/m3, 4000 ppm - Notes: GERMANY
- OEL Type: MAK - TWA(8h): 1900 mg/m3, 800 ppm - Notes: SWITZERLAND
- OEL Type: ACGIH - STEL: 1000 ppm
- OEL Type: HTP - TWA(8h): 1900 mg/m3, 800 ppm - STEL(15 min): 2400 mg/m3, 1000 ppm - Notes: FINLAND
- OEL Type: TLV - STEL(15 min): 1000 ppm - Notes: IRELAND

propane - CAS: 74-98-6

- OEL Type: MAK - TWA: 1800 mg/m3, 1000 ppm - STEL: 3600 mg/m3, 2000 ppm - Notes: AUSTRIA
- OEL Type: VLEP - TWA: 1000 ppm - Notes: BELGIUM
- OEL Type: VEA - TWA: 1800 mg/m3, 1000 ppm - Notes: CANADA - QUEBEC
- OEL Type: TLV - TWA: 1800 mg/m3, 1000 ppm - STEL: 3600 mg/m3, 2000 ppm - Notes: DENMARK
- OEL Type: AGW - TWA: 1800 mg/m3, 1000 ppm - STEL: 7200 mg/m3, 4000 ppm - Notes: GERMANY
- OEL Type: NDS - TWA: 1800 mg/m3 - Notes: POLAND
- OEL Type: VLA - TWA: 1000 ppm - Notes: SPAIN
- OEL Type: TLV-ACGIH - TWA: 1800 mg/m3, 1000 ppm - Notes: USA
- OEL Type: OSHA - TWA: 1800 mg/m3, 1000 ppm - Notes: USA
- OEL Type: HTP - TWA: 1500 mg/m3, 800 ppm - STEL: 2000 mg/m3, 1100 ppm - Notes: FINLAND
- OEL Type: MAK - TWA: 1800 mg/m3, 1000 ppm - STEL: 7200 mg/m3, 4000 ppm - Notes: SWITZERLAND
- OEL Type: VLEP - TWA: 1400 mg/m3, 778 ppm - STEL: 1800 mg/m3, 1000 ppm - Notes: ROMANIA
- OEL Type: TLV - TWA: 1800 mg/m3, 1000 ppm - Notes: LITHUANIA

ethane - CAS: 74-84-0

- OEL Type: OEL - TWA: 1000 ppm - Notes: FINLAND
- OEL Type: WES - Notes: New Zealand_Simple asphyxiant - may present an explosion hazard

DNEL Exposure Limit Values

ethanol; ethyl alcohol - CAS: 64-17-5

Worker Industry: 1900 mg/m3 - Exposure: Human Inhalation - Frequency: Short Term, local effects

Worker Industry: 950 mg/m3 - Consumer: 114 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Industry: 343 mg/kg bw/d - Consumer: 206 mg/kg bw/d - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Consumer: 87 mg/kg bw/d - Exposure: Human Oral - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

ethanol; ethyl alcohol - CAS: 64-17-5

Target: Fresh Water - Value: 0.96 mg/l

Target: Marine water - Value: 0.79 mg/l

Target: Microorganisms in sewage treatments - Value: 580 mg/l

Target: Freshwater sediments - Value: 3.6 mg/kg

Target: Marine water sediments - Value: 2.9 mg/kg

Target: Intermittent releases - Value: 2.75 mg/l

Target: Soil - Value: 0.63 mg/kg
Target: STP - Value: 580 mg/l
Target: Oral (Secondary poisoning) - Value: 720 mg/kg

8.2. Exposure controls

Eye protection:

In case of involuntary spread, wear safety goggles with side shields (EN 166).

Protection for skin:

Under normal conditions of use no special precautions are required.

Protection for hands:

Under normal conditions of use no special precautions are required.

If a prolonged contact with the product is expected, it's recommended to protect your hands with work gloves resistant to penetration (ref. Standard EN 374). Final choice of the gloves material must also evaluate the process of using the product and any other products derived from them. It also recalled that the latex gloves could cause sensitization effects.

Respiratory protection:

If you exceed the workplace exposure limits or cause fogging, the use of a respiratory protection device is necessary.

Thermal Hazards:

None

Environmental exposure controls:

See section 7 and 13.

Appropriate engineering controls:

Ensure adequate ventilation of the premises.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	**Value**	**Method:**	**Notes**
Physical state:	Liquid under pressure	--	--
Colour:	various colors	--	--
Odour:	alcoholic	--	--
Melting point/freezing point:	Ethanol: - 114 °C (1013 hPa)	--	--
Boiling point or initial boiling point and boiling range:	Ethanol: 78 °C (1013 hPa)	--	--
Flammability:	Flammable	--	--
Lower and upper explosion limit:	Ethanol: sup (UEL):.13,5 %; inf (LEL): 2,5 %	--	LPG: 1.9 vol% - 8.5 vol%
Flash point:	Ethanol: 13 ° C	--	LPG: -85°C
Auto-ignition temperature:	Ethanol: 363°C	--	LPG: 465°C
Decomposition temperature:	Not Relevant	--	--
pH:	Not applicable	--	--
Kinematic viscosity:	Not Relevant	--	--
Solubility in water:	partially soluble	--	--
Solubility in oil:	Not Relevant	--	--
Partition coefficient n-octanol/water (log value):	Not Relevant	--	--
Vapour pressure:	Ethanol: 5.726 Pa (20 °C)	--	LPG: 2,1±0,5 bar (20°C)
Density and/or relative density:	Ethanol: 0,79 g/ml	--	--
Relative vapour density:	Ethanol: 1,6	--	--
Particle characteristics:			
Particle size:	Not applicable	--	--

9.2. Other information

Properties	**Value**	**Method:**	**Notes**
Explosive properties:	not explosive	--	See section 10
Oxidizing properties:	non-oxidizing	--	--

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapours may form explosive mixtures with air.

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

ETHANOL: Oxidizing agents, peroxides, alkali metals, ammonia, hydrogen peroxide.

LPG: contact with strong oxidants (peroxides, chromates, chlorates, perchlorates ...) or other substances (nitrates, liquid oxygen, fluorine ...) can form explosive mixtures with air and can cause fire hazards in particular conditions (sources of ignition). The presence of strong acids or alkalis can cause corrosion of the containers with consequent leakage of the product.

10.4. Conditions to avoid

Avoid overheating, electrostatic discharge and all sources of ignition.

10.5. Incompatible materials

ETHANOL: Strong inorganic acids. Oxidizing agents. Aluminum at high temperature .

Reactions with strongly oxidizing substances (perchlorates, peroxides, chromic acid, etc.) can have an explosive course. Alkaline metals in contact with ethanol develop hydrogen (flammable gas).

Reacts violently with acetyl chloride. Hypochlorite added to ethanol can cause an explosion. The addition of ethanol to concentrated hydrogen peroxide leads to the formation of an explosive compound.

LPG: mixture with nitrates or other strong oxidants (eg chlorates, perchlorates, hydrogen chloride, fluorine, liquid oxygen) can create an explosive mass. Strong acids and alkalis.

10.6. Hazardous decomposition products

In case of fire or decomposition may spread gas and vapors potentially harmful for health as CO2, carbon mono-oxide and other irritating fumes.

SECTION 11: Toxicological information

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

Toxicological information of the product:

a) acute toxicity

Not classified

Based on available data, the classification criteria are not met

b) skin corrosion/irritation

Not classified

Based on available data, the classification criteria are not met

c) serious eye damage/irritation

Not classified

Based on available data, the classification criteria are not met

d) respiratory or skin sensitisation

Not classified

Based on available data, the classification criteria are not met

e) germ cell mutagenicity

Not classified

Based on available data, the classification criteria are not met

f) carcinogenicity

Not classified

Based on available data, the classification criteria are not met

g) reproductive toxicity

Not classified

Based on available data, the classification criteria are not met

h) STOT-single exposure

Not classified

Based on available data, the classification criteria are not met

i) STOT-repeated exposure

Not classified

Based on available data, the classification criteria are not met

j) aspiration hazard

Not classified

Based on available data, the classification criteria are not met

Toxicological information of the main substances found in the product:

butane - CAS: 106-97-8

a) acute toxicity:

Test: LC50 - Route: Inhalation - Species: Rat = 658 mg/l - Duration: 4h - Notes: Vapors can cause narcotic effects.

Test: LC50 - Route: Inhalation Gas - Species: Rat = 274200 ppm - Duration: 4h - Notes: High concentration or excessive exposure can cause unconsciousness and asphyxiation. It causes headaches and drowsiness.

b) skin corrosion/irritation:

Test: Skin Irritant - Route: Skin - Species: Man Negative - Notes: Violent expansion of the compressed gas can cause cold burns at the point of contact. Symptoms are redness, burning / itching, blisters, and possible subsequent infections.

c) serious eye damage/irritation:

Test: Eye Irritant - Route: .EYES Negative - Notes: Violent expansion of the compressed gas can cause cold burns and permanent damage and / or blindness.

d) respiratory or skin sensitisation:

Test: Skin Sensitization - Route: Skin Not applicable.

e) germ cell mutagenicity:

Test: Mutagenesis (Ames test) - Species: Salmonella Typhimurium Negative

Test: In vitro chromosome aberration test Negative

Test: In vivo mutation test Negative

f) carcinogenicity:

Test: Carcinogenicity Negative

g) reproductive toxicity:

Test: NOAEL - Route: Inhalation Gas - Species: Rat = 21394 mg/l

h) STOT-single exposure:

Test: Acute toxicity Not available

i) STOT-repeated exposure:

Test: NOAEL - Route: Inhalation Gas - Species: Rat = 21394 mg/l

Test: Chronic toxicity - Route: Inhalation Gas - Species: Rat Negative - Duration: 6 weeks

ethanol; ethyl alcohol - CAS: 64-17-5

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat = 7000 mg/kg - Notes: OECD 401

Test: LC50 - Route: Inhalation - Species: Rat = 20000 ppm - Duration: 10h - Notes: OECD 403

Test: LD50 - Route: Skin - Species: Rabbit > 20000 mg/kg

Test: LD50 - Route: Oral - Species: Mouse = 3400 mg/kg

Test: LC50 - Route: Inhalation - Species: Mouse = 39 mg/m3 - Duration: 4h

b) skin corrosion/irritation:

Test: Skin Irritant - Species: Rat Negative - Notes: OECD 404

Repeated or prolonged skin contact may cause dermatitis or dieback.

c) serious eye damage/irritation:

Test: Eye Irritant Positive - Notes: OECD 405

d) respiratory or skin sensitisation:

Test: Skin Sensitization Negative - Notes: OECD 406

e) germ cell mutagenicity:

Test: In vitro chromosome aberration test Negative - Notes: OECD 475

Test: In vitro mammalian cell test Negative - Notes: OECD 476

f) carcinogenicity:

Test: NOAEL - Route: Oral - Species: Rat > 3000 mg/kg

Test: NOAEL - Route: Skin - Species: Mouse (female) > 4400 mg/kg

Test: NOAEL - Route: Inhalation - Species: Mouse (male) > 4250 mg/kg

g) reproductive toxicity:

Test: NOAEL - Route: Oral - Species: Rat = 5.2 g/kg - Notes: OECD 414

Test: NOAEC - Route: Inhalation - Species: Rat = 39 mg/l - Notes: OECD 414

Test: NOAEL - Route: Oral - Species: Mouse = 13.8 g/kg

Test: NOAEC - Route: Inhalation - Species: Rat > 16000 ppm

i) STOT-repeated exposure:

Test: NOAEL - Route: Oral - Species: Rat = 1.73 mg/kg

isobutane - CAS: 75-28-5

a) acute toxicity:

Test: LC50 - Route: Inhalation Gas - Species: Rat = 658 mg/l - Duration: 4h

Test: LC50 - Route: Inhalation Gas - Species: Mouse = 260000 mg/l - Duration: 4h - Notes: Vapors can cause narcotic effects. High concentrations in the inhaled air can cause unconsciousness and asphyxiation due to lack of oxygen.

b) skin corrosion/irritation:

Test: Skin Irritant - Route: Skin - Species: Man Negative - Notes: Violent expansion of the compressed gas can cause cold burns at the point of contact. Symptoms are redness, burning / itching, blisters, and possible subsequent infections.

c) serious eye damage/irritation:

Test: Eye Irritant - Route: .EYES Negative - Notes: Violent expansion of the compressed gas can cause cold burns and permanent damage and / or blindness.

d) respiratory or skin sensitisation:

Test: Skin Sensitization - Route: Skin Negative

e) germ cell mutagenicity:

Test: Mutagenesis (Ames test) - Species: Salmonella Typhimurium Negative

Test: Mutagenensis (Micronucleus Test) - Route: Inhalation Gas - Species: Rat Negative

f) carcinogenicity:

Test: Carcinogenicity Negative

g) reproductive toxicity:

Test: NOAEL (fertility) - Route: Inhalation Gas - Species: Rat = 7131 mg/l - Notes: parents

Test: NOAEL - Route: Inhalation Gas - Species: Rat = 21394 mg/l

i) STOT-repeated exposure:

Test: NOAEL - Route: Inhalation Gas - Species: Rat = 21394 mg/l - Duration: 6 weeks

propane - CAS: 74-98-6

a) acute toxicity:

Test: LC50 - Route: Inhalation - Species: Rat = 800000 ppm - Duration: 15 minutes - Source: studio chiave propano - Notes: Vapors can cause narcotic effects, headaches and dizziness and asphyxiation due to lack of oxygen.

Test: LC50 - Route: Inhalation Gas - Species: Rat = 14442738 mg/m3 - Duration: 15 minutes - Source: studio chiave propano

Test: LC50 - Route: Inhalation Gas - Species: Rat = 1443 mg/l - Duration: 15 minutes - Source: studio chiave propano

Test: LC50 - Route: Inhalation Gas - Species: Mouse = 260000 ppm - Duration: 4h - Source: studio chiave propano

b) skin corrosion/irritation:

Test: Skin Irritant - Route: Skin - Species: Man Negative - Notes: Compressed gas causes cold burns.

c) serious eye damage/irritation:

Test: Eye Irritant - Route: .EYES Negative - Notes: Compressed gas causes cold burns.

d) respiratory or skin sensitisation:

Test: Respiratory Sensitization - Route: Inhalation Gas - Notes: Asphyxiating, it causes headaches and drowsiness.

Test: Skin Sensitization - Route: Skin - Notes: It can cause burning / itching.

e) germ cell mutagenicity:

Test: Mutagenesis (Ames test) - Species: Salmonella Typhimurium Negative - Source: studio chiave propano

Test: In vivo mutation test - Route: Inhalation Gas - Species: Rat Negative

f) carcinogenicity:

Test: Carcinogenicity Negative

g) reproductive toxicity:

Test: NOAEL - Route: Inhalation Gas - Species: Rat = 21641 mg/l - Notes: OECD 422

i) STOT-repeated exposure:

Test: LOAEC - Route: Inhalation Gas - Species: Rat = 21641 mg/m3

Test: NOAEL - Route: Inhalation Gas - Species: Rat = 7214 mg/l

ethane - CAS: 74-84-0

a) acute toxicity:

Test: LC50 - Route: Inhalation Gas - Species: Rat > 800000 ppm - Duration: 15 minutes

Test: LC50 - Route: Inhalation Gas - Species: Rat = 1442738 mg/m3 - Duration: 15 minutes

Test: LC50 - Route: Inhalation Gas - Species: Rat = 1443 mg/l - Duration: 15 minutes

e) germ cell mutagenicity:

Test: Bacterial Reverse Mutation Test Negative

Test: Mutagenensis (Micronucleus Test) Negative

g) reproductive toxicity:

Test: NOAEC - Route: Inhalation Gas - Species: Rat = 10000 ppm - Duration: 90 days

Test: NOAEC - Route: Inhalation Gas - Species: Rat = 10426 ppm

i) STOT-repeated exposure:

Test: NOAEC - Route: Inhalation Gas - Species: Rat = 10000 ppm - Duration: 90 days

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration >= 0.1%

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Not classified for environmental hazards

Based on available data, the classification criteria are not met

butane - CAS: 106-97-8

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 24.11 mg/l - Duration h: 96 - Notes: QSAR EPA 2008
Endpoint: LC50 - Species: Daphnia = 14.22 mg/l - Duration h: 48

ethanol; ethyl alcohol - CAS: 64-17-5

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Algae (Chlamydomonas eugametos) = 18 g/l - Duration h: 48
Endpoint: EC50 - Species: Ceriodaphnia dubia = 5 g/l - Duration h: 48
Endpoint: LC50 - Species: Fish (Pimephales promelas) = 13.5 g/l - Duration h: 96
Endpoint: EC50 - Species: Algae (Selenastrum capricornutum) = 12.9 g/l - Duration h: 72
Endpoint: EC50 - Species: Algae (Chlorella vulgaris) = 275 mg/l - Duration h: 72
Endpoint: LC50 - Species: Fish (salmo gairdneri) = 13 g/l - Duration h: 96
Endpoint: EC50 - Species: Daphnia magna = 12.3 g/l - Duration h: 48
Endpoint: EC50 - Species: Invertebrates (artemia salina) > 10 g/l - Duration h: 24
Endpoint: EC50 - Species: Invertebrates (artemia salina nauplii) = 857 mg/l - Duration h: 48
Endpoint: NOEC - Species: Algae (Chlamydomonas eugametos) = 7.9 g/l
Endpoint: NOEC - Species: Algae (Skeletonema costatum) = 3.2 g/l - Duration h: 120

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Daphnia magna > 10 mg/l - Duration h: 504
Endpoint: NOEC - Species: Ceriodaphnia dubia = 9.6 mg/l - Duration h: 240
Endpoint: NOEC - Species: Invertebrates (palaemonetes pugio) = 79 mg/l - Duration h: 240

isobutane - CAS: 75-28-5

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 24.11 mg/l - Duration h: 96
Endpoint: EC50 - Species: Daphnia = 14.22 mg/l - Duration h: 48
Endpoint: ErC50 - Species: Algae = 7.71 mg/l

propane - CAS: 74-98-6

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 49.47 mg/l - Duration h: 96
Endpoint: EC50 - Species: Daphnia = 27.14 mg/l - Duration h: 48
Endpoint: EC50 - Species: Algae = 11.89 mg/l - Duration h: 72

ethane - CAS: 74-84-0

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 49.9 mg/l - Duration h: 96
Endpoint: LC50 - Species: Daphnia = 69.43 mg/l - Duration h: 48
Endpoint: EC50 - Species: Algae = 19.37 mg/l - Duration h: 96

12.2. Persistence and degradability

butane - CAS: 106-97-8

Biodegradability: Readily biodegradable

ethanol; ethyl alcohol - CAS: 64-17-5

Biodegradability: Readily biodegradable - Duration h: 20d - %: 84
Biodegradability: Readily biodegradable - Duration h: 5d - %: 74
Test: COD - %: 1.640.000 - Notes: mg/l O2

isobutane - CAS: 75-28-5

Biodegradability: Readily biodegradable

propane - CAS: 74-98-6

Biodegradability: Readily biodegradable

ethane - CAS: 74-84-0

Biodegradability: Readily biodegradable - Duration h: 385,5 h - %: 100

12.3. Bioaccumulative potential

butane - CAS: 106-97-8

Not bioaccumulative - Test: Log Pow 2.89

ethanol; ethyl alcohol - CAS: 64-17-5

Not bioaccumulative - Test: BCF - Bioconcentrantion factor 3 - Notes: (HSDB, 2015)

isobutane - CAS: 75-28-5

Not bioaccumulative - Test: Log Pow 2.88

propane - CAS: 74-98-6

Not bioaccumulative - Test: Log Pow 2.35

ethane - CAS: 74-84-0

Test: Log Pow 1.81

12.4. Mobility in soil

butane - CAS: 106-97-8

Notes: Thanks to its rapid evaporation, soil and water pollution are not likely.

ethanol; ethyl alcohol - CAS: 64-17-5

Test: Koc 2.75 - Notes: It is not persistent in the environment. Released into the environment, it is mainly distributed in air and water.

isobutane - CAS: 75-28-5

Notes: Thanks to its rapid evaporation, soil and water pollution are not likely.

propane - CAS: 74-98-6

Absorption to the solid phase of the soil is not expected.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration >= 0.1%

12.7. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number or ID number

ADR-UN Number:	1950
IATA-UN Number:	1950
IMDG-UN Number:	1950

14.2. UN proper shipping name

ADR-Shipping Name:	AEROSOLS, flammable
IATA-Shipping Name:	AEROSOLS, flammable
IMDG-Shipping Name:	AEROSOLS, flammable

14.3. Transport hazard class(es)

ADR-Class:	2
ADR-Label:	2.1
ADR - Hazard identification number:	-
IATA-Class:	2
IATA-Label:	2.1
IMDG-Class:	2
IMDG-Class:	2.1

14.4. Packing group

ADR-Packing Group:	-
IATA-Packing group:	-
IMDG-Packing group:	-

14.5. Environmental hazards

ADR-Enviromental Pollutant:	No
IMDG-Marine pollutant:	No
IMDG-EmS:	F-D , S-U

14.6. Special precautions for user

ADR-Subsidiary hazards:	See SP63
ADR-S.P.:	190 327 344 625
ADR-Transport category (Tunnel restriction code):	2 (D)
IATA-Passenger Aircraft:	203
IATA-Subsidiary hazards:	See SP63
IATA-Cargo Aircraft:	203
IATA-S.P.:	A145 A167 A802
IATA-ERG:	10L
IMDG-Subsidiary hazards:	See SP63
IMDG-Stowage and handling:	SW1 SW22
IMDG-Segregation:	SG69

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

This document has been prepared in accordance with the laws listed below only for physical hazards, according to the exemption of food stuff from the Reg. (EC) n. 1272/2008 (CLP) Art. 1(5)(e) and Reg. (EC) n. 1907/2006 (REACH) Art. 2(6). Food are within the scope of food laws.

Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) n. 2020/878
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)

Where applicable, refer to the following regulatory provisions :
Directive 2012/18/EU (Seveso III)
Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):
Seveso III category according to Annex 1, part 1
Product belongs to category: P3a

15.2. Chemical safety assessment
Not applicable (food stuff).

SECTION 16: Other information

Full text of phrases referred to in Section 3:
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Hazard class and hazard category	Code	Description
Flam. Gas 1A	2.2/1A	Flammable gas, Category 1A
Aerosols 1	2.3/1	Aerosol, Category 1
Press. Gas	2.5	Gases under pressure
Flam. Liq. 2	2.6/2	Flammable liquid, Category 2
Eye Irrit. 2	3.3/2	Eye irritation, Category 2

This safety data sheet has been completely updated in compliance to Regulation 2020/878.
Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Aerosols 1, H222, H229	Aerosols CLP criteria (Annex I, 2.3.2.2.)

This document was prepared by a competent person who has received appropriate training.
Main bibliographic sources:
ECHA website: https://echa.europa.eu/home

IFA GESTIS website: https://limitvalue.ifa.dguv.de

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.