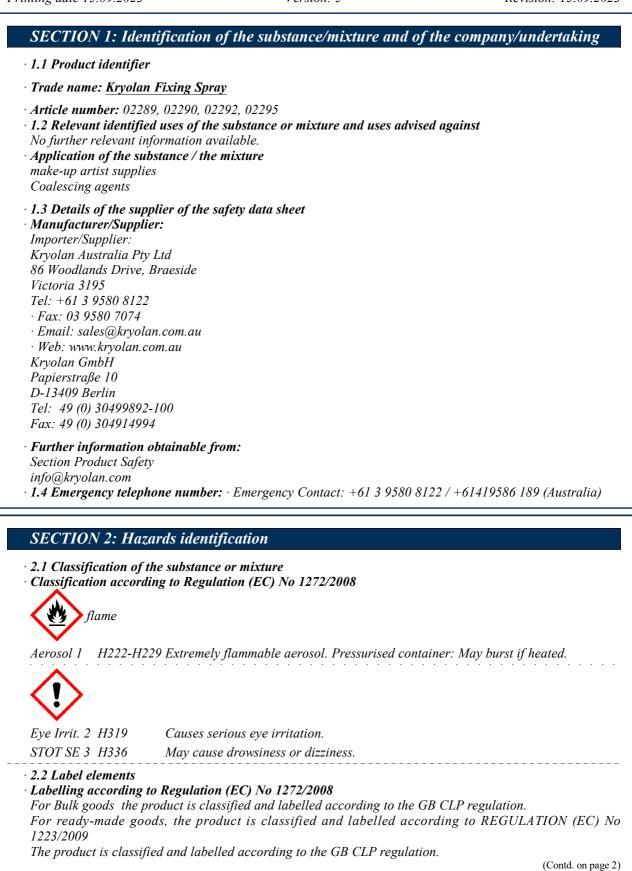
KRYOLAN

Safety data sheet according to 1907/2006/EC, Article 31

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· 2.3 Other hazards

- · Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- · vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

· 3.2 Chemical characterisation: Mixtures

· Description: Mixture of substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 106-97-8	butane, pure	30-60%
EINECS: 203-448-7	🚸 Flam. Gas 1A, H220	
Index number: 601-004-00-0	Acute Tox. 3, H331	
	Press. Gas (Comp.), H280	
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CA	4S: 67-63-0	2-Propanol	20-40%
EL	NECS: 200-661-7	🚸 Flam. Liq. 2, H225	-
Inc	dex number: 603-117-00-0		
CA	4S: 74-98-6	propane	10-30%
EL	NECS: 200-827-9	🕐 Flam. Gas 1A, H220	-
Inc	dex number: 601-003-00-5		
· No	ot dangerous substances:		
CA	4S: 26062-56-6	Acrylates/t-Butylacrylamide Copolymer	
CA	4S: 75-28-5	isobutane	0.1-<1%
EL	NECS: 200-857-2	🐵 Flam. Gas 1A, H220	1
Inc	dex number: 601-004-00-0		
CA	4S: 110-27-0	isopropyl myristate	
EL	NECS: 203-751-4		
CA	4S: 6938-94-9	Diisopropyl Adipate	
·Ad	lditional information: For	the wording of the listed hazard phrases refer to section 16.	

SECTION 4: First aid measures

• 4.1 Description of first aid measures

- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Wash off with water and soap.
- After eye contact:
- Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing:
- Seek medical treatment in case of complaints.

Purge mouth and drink plenty of water in small swallows. Do not force vomiting

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

- No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

No juriner relevant information available.

SECTION 5: Firefighting measures

• 5.1 Extinguishing media

- *Suitable extinguishing agents:* CO2, sand, extinguishing powder. Do not use water.
- · For safety reasons unsuitable extinguishing agents: Water
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- 5.3 Advice for firefighters
- Protective equipment:

Wear self-contained respiratory protective device.

no special conditions required.

SECTION 6: Accidental release measures

• 6.1 Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.

• 6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.

- \cdot 6.3 Methods and material for containment and cleaning up:
- Dispose contaminated material as waste according to section 13. Ensure adequate ventilation.

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· 6.4 Reference to other sections

See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

SECTION 7: Handling and storage

• 7.1 Precautions for safe handling Ensure good ventilation/exhaustion at the workplace.

Information about fire - and explosion protection:

Do not spray onto a naked flame or any incandescent material.

Keep ignition sources away - Do not smoke.

Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

• Requirements to be met by storerooms and receptacles:

Observe official regulations on storing packagings with pressurised containers.

· Information about storage in one common storage facility: Store away from foodstuffs.

• Further information about storage conditions: Keep container tightly sealed.

• 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

• Additional information about design of technical facilities: No further data; see section 7.

· Ingredients with limit values that require monitoring at the workplace:

106-97-8 butane, pure

WEL Short-term value: 1810 mg/m³, 750 ppm Long-term value: 1450 mg/m³, 600 ppm Carc (if more than 0.1% of buta-1.3-diene)

67-63-0 2-Propanol

WEL Short-term value: 1250 mg/m³, 500 ppm Long-term value: 999 mg/m³, 400 ppm

• Additional information: The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

- · Personal protective equipment:
- General protective and hygienic measures:

Keep away from food, beverages and feed. Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Protection of hands:



Protective gloves

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- Eye protection:
- Safety glasses



Tightly sealed goggles

SECTION 9: Physical and chemical properties

General Information	
Appearance:	
Form:	Aerosol
Colour:	According to product specification
Odour:	Characteristic
Odour threshold:	Not determined.
pH-value at 20 °C:	7
Change in condition	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling r	ange: -44.5 °C
Flash point:	-97 °C
Flammability (solid, gas):	Not applicable.
Decomposition temperature:	Not determined.
Ignition temperature:	Product is not selfigniting.
Explosive properties:	Product is not explosive. However, formation of explosive air vapour mixtures are possible.
Explosion limits:	
Lower:	1.5 Vol %
Upper:	12 Vol %
Vapour pressure at 20 °C:	8,300 hPa
Density at 20 °C:	0.34803 g/cm^3
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
water:	Not miscible or difficult to mix.

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· Partition coefficient: n-octanol/water:	Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
· Solvent content:		
Organic solvents:	92.5 %	
VÕC (EC)	93.41 %	
Solids content:	5.7 %	
· 9.2 Other information	No further relevant information available.	

SECTION 10: Stability and reactivity

- · 10.1 Reactivity No further relevant information available.
- · 10.2 Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- 10.3 Possibility of hazardous reactions No dangerous reactions known.
- 10.4 Conditions to avoid No further relevant information available.
- \cdot 10.5 Incompatible materials: No further relevant information available.
- · 10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects

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

· LD/LC50 values relevant for classification:

106-97-8 butane, pure

Inhalative LC50/4 h 658 mg/l (rat)

- · Primary irritant effect:
- · Skin corrosion/irritation Based on available data, the classification criteria are not met.
- · Serious eye damage/irritation
- Causes serious eye irritation.
- · Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- Additional toxicological information:
- · CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
- · Germ cell mutagenicity Based on available data, the classification criteria are not met.
- · Carcinogenicity Based on available data, the classification criteria are not met.
- *Reproductive toxicity Based on available data, the classification criteria are not met.*
- · STOT-single exposure
- May cause drowsiness or dizziness.
- STOT-repeated exposure Based on available data, the classification criteria are not met.
- Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- 12.1 Toxicity
- Aquatic toxicity: No further relevant information available.
- \cdot 12.2 Persistence and degradability No further relevant information available.
- \cdot **12.3 Bioaccumulative potential** No further relevant information available.

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- 12.4 Mobility in soil No further relevant information available.
- \cdot Additional ecological information:

· General notes:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · 12.5 Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packaging:
- *Recommendation: Disposal must be made according to official regulations.*

UN1950	
1950 AEROSOLS	
AEROSOLS, flammable	
2 5F Gases.	
2.1	
2.1 Gases.	
2.1	
Void	
Not applicable.	
Warning: Gases.	
-	1950 AEROSOLS AEROSOLS, flammable 2 5F Gases. 2.1 2.1 Gases. 2.1 Void Not applicable.

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EMS Number:	F-D,S-U
Stowage Code	SW1 Protected from sources of heat.
	SW2 Clear of living quarters.
Segregation Code	SG69 For AEROSOLS with a maximum capacity of I
	litre:
	Segregation as for class 9. Stow "separated from" class
	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.
Transport/Additional information:	Not applicable.
ADR	
Limited quantities (LQ)	1L
Excepted quantities (EQ)	Code: E0
	$\mathbf{N}_{\mathbf{r}}$
	Not permitted as Excepted Quantity
Transport category	2
Transport category Tunnel restriction code	Not permitted as Excepted Quantity 2 D
1 01	2
Tunnel restriction code	2
Tunnel restriction code IMDG	2 D
Tunnel restriction code IMDG Limited quantities (LQ)	2 D 1L

SECTION 15: Regulatory information

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

· Directive 2012/18/EU

- · Named dangerous substances ANNEX I None of the ingredients is listed.
- Seveso category P3a FLAMMABLE AEROSOLS
- Qualifying quantity (tonnes) for the application of lower-tier requirements 150 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

H220 Extremely flammable gas.

H225 Highly flammable liquid and vapour.

- H280 Contains gas under pressure; may explode if heated.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.

H336 May cause drowsiness or dizziness.

· Department issuing SDS: Section Product Safety

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Lars Köppling Email: l.koeppling@kryolan.com · Abbreviations and acronyms: ADR: Accord relatif au transport international 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) VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative Flam. Gas 1A: Flammable gases - Category 1A Aerosol 1: Aerosols – Category 1 Press. Gas (Comp.): Gases under pressure - Compressed gas Flam. Liq. 2: Flammable liquids - Category 2 Acute Tox. 3: Acute toxicity - Category 3 Eye Irrit. 2: Serious eye damage/eye irritation - Category 2 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3 * * Data compared to the previous version altered.