Safety Data Sheet

according to UK REACH Regulation

JMC Cold spray

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

1.1. Product identifier

JMC Cold spray

UFI: 7JUM-Y1R1-3H0D-2QWF

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

Use of the substance/mixture

No information available.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name:	Johannes J. Matthies GmbH & Co. KG	
Street:	Hammerbrookstr. 97	
Place:	D-20097 Hamburg	
Telephone:	+ 49 (0) 40 2 37 21-0	Telefax: + 49 (0) 40 2 37 21-363
E-mail:	info@matthies.de	
Internet:	www.matthies.de	
Responsible Department:	Abteilung Produktsicherheit	

Supplier

Company name:	Larsson UK Ltd.
Street:	7 Alpha Court, Phoenix Parkway
Place:	GB-NN17 5DP Corby
Telephone:	+ 44 1536 265633
E-mail:	info@larsson.uk.com
Internet:	www.larsson.uk.com

1.4. Emergency telephone number:

+ 44 1536 265633

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Aerosol 1; H222-H229

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Signal word: Danger

Pictograms:

Hazard statements

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.

Precautionary statements

P102	Keep out of reach of children.
P101	If medical advice is needed, have product container or label at hand.
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.
P260	Do not breathe vapour/aerosol.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
P501	Dispose of waste according to applicable legislation.

2.3. Other hazards

In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
75-28-5	isobutane			50 - < 100 %
	200-857-2	601-004-00-0	01-2119485395-27	
	Flam. Gas 1, Liquefied gas; H220 H280			
74-98-6	propane			10 - < 20 %
	200-827-9	601-003-00-5	01-2119486944-21	
	Flam. Gas 1, Liquefied gas; H220 H280			
106-97-8	butane			3 - < 5 %
	203-448-7	601-004-00-0	01-2119474691-32	
	Flam. Gas 1, Liquefied gas; H220 H280			
124-38-9	Carbon Dioxide			1 - < 3 %
	204-696-9			
	Compressed gas; H280			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
106-97-8	203-448-7	butane	3 - < 5 %
	inhalation: LC50 = 658 ppm (gases)		

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider: Pay attention to self-protection! Remove persons to safety. Never give anything by mouth to an unconscious person or a person with cramps.

After inhalation

Remove person to fresh air and keep comfortable for breathing. When in doubt or if symptoms are observed, get medical advice.

After contact with skin

Wash with plenty of soap and water. Take off immediately all contaminated clothing and wash it before reuse. When in doubt or if symptoms are observed, get medical advice.

After contact with eyes

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. When in doubt or if symptoms are observed, get medical advice.

After ingestion

Do NOT induce vomiting. Observe risk of aspiration if vomiting occurs. Call a physician in any case!

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

Causes skin irritation. May cause drowsiness or dizziness.
Headache, Nausea, Dizziness.

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

Treat symptomatically. Call a POISON CENTER. Symptoms can occur only after several hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water mist. Foam. Carbon dioxide (CO2). Extinguishing powder.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated: Carbon dioxide (CO2), Carbon monoxide, aldehydes, carbon black, Pyrolysis products, toxic.

5.3. Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Move undamaged containers from immediate hazard area if it can be done safely. In case of fire: Wear self-contained breathing apparatus.

Additional information

Danger of bursting container.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Remove all sources of ignition. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Use personal protection equipment.

For non-emergency personnel

First aider: Pay attention to self-protection!

For emergency responders

Fight fire with normal precautions from a reasonable distance.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Ensure all waste water is collected and treated via a waste water treatment plant.

6.3. Methods and material for containment and cleaning up

For containment

Prevent spread over a wide area (e.g. by containment or oil barriers).

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Clean contaminated articles and floor according to the environmental legislation.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Observe instructions for use.
Dust must be exhausted directly at the point of origin. Vapours/aerosols must be exhausted directly at the point of origin. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.
When using do not eat, drink, smoke, sniff.
Personal protection equipment: see section 8
In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Heating causes rise in pressure with risk of bursting.

Further information on handling

Avoid contact with skin. Avoid contact with eyes.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed.
To follow: State Laws and Regulations

Hints on joint storage

Do not store together with: Oxidizing agent, Pyrophoric or self-heating substances, Food and feedingstuffs

Further information on storage conditions

Protect against: Frost. Protect against direct sunlight. Store in a cool dry place.
To follow: State Laws and Regulations

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
106-97-8	Butane	600	1450		TWA (8 h)	WEL
		750	1810		STEL (15 min)	WEL
124-38-9	Carbon dioxide	5000	9150		TWA (8 h)	WEL
		15000	27400		STEL (15 min)	WEL

Additional advice on limit values

a no restriction
b End of exposure or end of shift
c at long term exposure: after several previous shifts
d before next shift

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

blood (B)
Urine (U)

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Protective and hygiene measures

Avoid exposure. Wear suitable protective clothing. Draw up and observe skin protection programme.

Eye/face protection

Suitable eye protection: Tightly sealed safety glasses.
DIN EN 166

Hand protection

Protect skin by using skin protective cream. When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
Suitable material: NBR (Nitrile rubber) Breakthrough time: 480 min
Thickness of the glove material: 0,45 mm
EN ISO 374

Skin protection

Wear suitable protective clothing. Take off immediately all contaminated clothing and wash it before reuse.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

exceeding exposure limit values:
Suitable respiratory protection apparatus: gas filtering equipment (EN 141).
Filtering device with filter or ventilator filtering device of type: AX
Observe the wear time limits as specified by the manufacturer.
To follow: State Laws and Regulations

Environmental exposure controls

To follow: State Laws and Regulations

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Aerosol
Colour:	colourless
Odour:	characteristic
Odour threshold:	not determined

		Test method
pH-Value (at 20 °C):	not determined	DIN 19268
Changes in the physical state		
Melting point/freezing point:	not determined	
Boiling point or initial boiling point and boiling range:	-42 °C	
Flash point:	-80 °C	
Flammability		
Solid/liquid:	Flammable aerosol.	
Lower explosion limits:	1,5 vol. %	
Upper explosion limits:	10,8 vol. %	
Auto-ignition temperature:	not determined	
Decomposition temperature:	not determined	

Vapour pressure:	not determined	
Density (at 20 °C):	not determined	DIN 51757
Water solubility:	The study does not need to be conducted because the substance is known to be insoluble in water.	

Solubility in other solvents

not determined

Partition coefficient n-octanol/water:	not determined
Viscosity / kinematic:	not determined
Relative vapour density:	not determined

9.2. Other information

Data apply to the technically active substance.: Relative density, Colour, Odour, Viscosity, pH

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable. Ignition hazard.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Do not expose to temperatures above 50 °C. Heating causes rise in pressure with risk of bursting.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air. Take precautionary measures against static discharges.

10.5. Incompatible materials

Oxidizing agent. Pyrophoric or self-heating substances

10.6. Hazardous decomposition products

In case of fire may be liberated: Carbon dioxide (CO_2), Carbon monoxide, aldehydes, carbon black, Pyrolysis products, toxic.

Further information

Do not mix with other chemicals.

SECTION 11: Toxicological information

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

Toxicocinetics, metabolism and distribution

No information available.

Acute toxicity

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

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
106-97-8	butane				
	inhalation (4 h) gas	LC50 658 ppm	Rat	GESTIS	

Irritation and corrosivity

Skin corrosion/irritation: Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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.
No indication of human carcinogenicity.
No indications of human germ cell mutagenicity exist.
No indications of human reproductive toxicity exist.

STOT-single exposure

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

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.

Specific effects in experiment on an animal

No information available.

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

11.2. Information on other hazards

Endocrine disrupting properties

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

Other information

No information available.

SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
75-28-5	isobutane						
	Acute fish toxicity	LC50 mg/l	91,42	96 h	Piscis	United States Environmental Protection A	The Ecosar class program has been develo
	Acute algae toxicity	ErC50 mg/l	19,37	96 h	Algae	US EPA OPPT Risk Assessment Division200	Calculation using ECOSAR Program v1.00.
	Acute crustacea toxicity	EC50 mg/l	69,43	48 h	Daphnia sp.	US EPA OPPT Risk Assessment Division200	Calculation using ECOSAR Program v1.00.
74-98-6	propane						
	Acute fish toxicity	LC50 mg/l	49,9	96 h	Piscis	United States Environmental Protection A	The Ecosar class program has been develo
	Acute algae toxicity	ErC50 mg/l	19,37	96 h	Algae	US EPA OPPT Risk Assessment Division200	Calculation using ECOSAR Program v1.00.
	Acute crustacea toxicity	EC50 mg/l	69,43	48 h	Daphnia sp.	US EPA OPPT Risk Assessment Division200	Calculation using ECOSAR Program v1.00.
106-97-8	butane						
	Acute fish toxicity	LC50 mg/l	49,9	96 h	Piscis	United States Environmental Protection A	The Ecosar class program has been develo
	Acute algae toxicity	ErC50 mg/l	19,37	96 h	Algae	US EPA OPPT Risk Assessment Division200	Calculation using ECOSAR Program v1.00.
	Acute crustacea toxicity	EC50 mg/l	69,43	48 h	Daphnia sp.	US EPA OPPT Risk Assessment Division200	Calculation using ECOSAR Program v1.00.

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
75-28-5	isobutane	1,09
74-98-6	propane	1,09
106-97-8	butane	1,09

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

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

12.7. Other adverse effects

No information available.

Further information

No special environmental measures are necessary.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products

160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; gases in pressure containers (including halons) containing hazardous substances; hazardous waste

List of Wastes Code - used product

160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; gases in pressure containers (including halons) containing hazardous substances; hazardous waste

List of Wastes Code - contaminated packaging

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

Contaminated packaging

Dispose of waste according to applicable legislation.

SECTION 14: Transport information

Land transport (ADR/RID)

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

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

Inland waterways transport (ADN)

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

Classification code:	5F
Special Provisions:	190 327 344 625
Limited quantity:	1 L
Excepted quantity:	E0

Marine transport (IMDG)

14.1. UN number:	UN 1950
14.2. UN proper shipping name:	AEROSOLS
14.3. Transport hazard class(es):	2
14.4. Packing group:	-
Hazard label:	2, see SP63
Marine pollutant:	-
Special Provisions:	63, 190, 277, 327, 344, 959
Limited quantity:	See SP277
Excepted quantity:	E0
EmS:	F-D, S-U

Air transport (ICAO-TI/IATA-DGR)

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

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

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: Flammable gases.

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40

Directive 2010/75/EU on industrial emissions:	No information available.
Directive 2004/42/EC on VOC in paints and varnishes:	No information available.
Information according to Directive 2012/18/EU (SEVESO III):	P3a FLAMMABLE AEROSOLS

Additional information

Aerosol directive (75/324/EEC).

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).
Water hazard class (D):	- - non-hazardous to water

Additional information

Observe in addition any national regulations!

15.2. Chemical safety assessment

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

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging
EU: European Union
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
REACh: Registration, Evaluation and Authorization of Chemicals
UN: United Nations
PBT: Persistent, Bioaccumulative, Toxic
SVHC: Substance of Very High Concern
vPvB: very Persistent, very Bioaccumulative
ATE: Acute Toxicity Estimates
BCF: Bio-Concentration Factor
DMEL: Derived Minimal Effect Level
DNEL: Derived No Effect Level
PNEC: Predicted No Effect Concentration
VOC: Volatile Organic Compounds
DIN: Deutsches Institut für Normung e.V. (German Institute for Standardization)
EN: European Standard
ISO: International Organization for Standardization
IUCLID: International Uniform ChemicaL Information Database
LC50: Lethal Concentration, 50 %
LD50: Lethal Dose, 50 %
LL50: Lethal Loading, 50 %
OECD: Organisation for Economic Co-operation and Development
EC50: Effective Concentration 50 %
M-Faktor: Multiplication Factor
EL50: Effect Loading, 50 %
ErC50: Effective Concentration 50 %, growth rate
M-Faktor: Multiplication Factor
NOEC: No Observed Effect Concentration
ADN: Accord européen relatif au transport international des marchandises Dangereuses par voies de Navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR: Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
DGR: Dangerous Goods Regulations
EmS: Emergency Schedules
IATA: International Air Transport Association
IBC: Intermediate Bulk Container
ICAO: International Civil Aviation Organization
IE: Industrial Emissions
IMDG: International Maritime Code for Dangerous Goods
LQ: Limited Quantity
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
MFAG: Medical First Aid Guide
RID: Regulations concerning the International carriage of Dangerous goods by rail

TI: Technical Instructions

Classification for mixtures and used evaluation method according to GB CLP Regulation

Classification	Classification procedure
Aerosol 1; H222-H229	On basis of test data

Relevant H and EUH statements (number and full text)

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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