



Material Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product:	Cold spray/aerosol (Kältespray/Spraydose)
Manufacturer:	Conrad Electronic SE
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of creation:	15.03.2022

1.1. Product identifier

Trade name or designation of the mixture	KÄLTESPRAY / Cold spray
Registration number	-
Synonyms	None.
Product number	BDS002501AE
UFI No.	Q8CX-58VT-7000-75QD

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

Identified uses	Coolant
Uses advised against	Unknown

2. Possible hazards

2.1 Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards. The following classification applies.

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

2.2. labelling elements

Labelling according to Regulation (EC) No 1272/2008 as amended.

Hazard pictograms	None.
Signal word	Caution

Hazard statements

H229 Pressurised container: May burst if heated.

Precautionary statements

Prevention

P102 Keep out of the reach of children.

P210 Keep away from heat/sparks/open flames/hot surfaces. Do not smoke.

P251 Do not pierce or burn, even after use.

Reaction

P336 Thaw frozen area with lukewarm water. Do not rub affected area.



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Storage

P410 + P412 Protect from sunlight and do not expose to temperatures exceeding 50 °C.

Disposal

Not assigned.

Additional information on the label

Avoid contact with eyes and skin, the liquid may cause frostbite.

2.3 Other hazards

This mixture does not contain any substances assessed as vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

3. Composition/information on ingredients

3.2 Mixtures

General information

Chemical name	%	CAS-No. / EC number	REACH registration number	Classification
(E)-1,3,3,3-tetrafluoroprop-1-ene	75 - 100	29118-24-9 471-480-0	01-0000019758-54	Press. Gas; H280

List of abbreviations and symbols that may have been used above

#: There is a Union occupational exposure limit value(s) for this substance.

M: M-factor

PBT: Persistent, bioaccumulative and toxic substance.

vPvB: Very persistent and very bioaccumulative substance.

All concentrations are given in weight percent unless the ingredient is a gas. Gas concentrations are given in volume percent.



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4. First aid measures

General information

Ensure that medical personnel are aware of the materials involved and take protective measures.

4.1 Description of first aid measures

Inhalation

If symptoms occur, remove affected person to fresh air. Get medical attention if symptoms persist.

Skin contact

Wash with soap and water. Get medical attention if irritation develops and persists.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Rinse out mouth. Get medical attention if symptoms develop.

4.2 Most important symptoms and effects, both acute and delayed

Exposure may cause short-term irritation, redness or discomfort.

4.3 Indication of any immediate medical attention and special treatment needed

Treat according to symptoms.

5. Firefighting measures

General fire hazards

Not available.

5.1 Extinguishing media

Suitable extinguishing media

Water. Alcohol-resistant foam. Carbon dioxide (CO₂). Dry sand.

Unsuitable extinguishing media

Do not use water jet for extinguishing as this may spread the fire.

5.2 Special hazards arising from the substance or mixture

In case of fire, harmful gases may develop.

5.3 Advice for fire-fighters

Special protective equipment for fire-fighting

In case of fire wear heavy breathing apparatus and complete protective equipment.

Special fire-fighting procedures

Containers should be cooled with water to avoid build-up of vapour pressure.

Special fire-fighting instructions

Use normal fire-fighting procedures, taking into account hazards from other materials involved.



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6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personnel not trained for emergencies

Wear appropriate personal protective equipment.

Emergency personnel

Keep unnecessary personnel away. Use recommended personal protection as outlined in section 8 of the SDS.

6.2 Environmental precautions

Avoid entering drains, soil or waterways.

6.3 Methods and material for containment and cleaning up

Seal the leak if this can be done without risk. If the leak cannot be repaired, move the gas cylinder to a safe and open area. Shut off the area until the gas has dissipated. Avoid all sources of ignition (no smoking, no flares, sparks or flames in the vicinity). Keep flammable materials (wood, paper, oil, etc.) away from the spilled material. This product is miscible with water.

6.4 Reference to other sections

For personal protection measures, see section 8 in the SDS. For waste disposal, see section 13 in the SDS.

7. Handling and storage

7.1 Precautions for safe handling

Container is pressurised: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray against a flame or onto a glowing object. Do not smoke during use or until the sprayed surface is completely dry. Do not cut, weld, solder, drill or grind the container and do not expose container to heat, fire, sparks or other sources of ignition. When transporting the substance, ground and connect the containers.

Do not reuse empty containers. Avoid prolonged contact. Use only in well-ventilated areas. Wear suitable personal protective equipment. Observe recognised industrial hygiene measures.

7.2 Conditions for safe storage, taking into account incompatibilities.

Contents are under pressure. Do not expose to heat or store at temperatures above 49°C (risk of explosion). Do not pierce, burn or crush. Do not handle or store this material near open flames, heat: Avoid handling or storing this material near open flames, heat or sources of ignition. Keep away from incompatible substances (See section 10 of SDS).

Storage class (TRGS 510): 2B (Aerosol dispensers and lighters)

7.3 Specific end uses

Not available.



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8. Exposure controls/personal protection equipment

8.1 Parameters to be monitored

Occupational exposure limit values

Germany:

DFG-MAK list (recommended occupational exposure limits). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value
(E)-1,3,3-tetrafluoroprop-1-ene (CAS 29118-24-9)	TWA	4700 mg/m ³ 1000 ppm

Germany:

TRGS 900, limit values in the air at the workplace.

Components	Type	Value
(E)-1,3,3,3-tetrafluoroprop-1-ene (CAS 29118-24-9)	AGW	4700 mg/m ³ 1000 ppm

Biological limit values

No biological exposure limits are given for the ingredient(s).

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no effect level (DNEL)

Not available.

Estimated No Effect Concentrations (PNECs).

Not available.

8.2 Exposure controls and monitoring

Appropriate engineering controls

Good general ventilation. Degree of ventilation to be adapted to conditions. Where appropriate, use process chambers, local exhaust systems or other structural measures to control airborne concentrations to keep them below recommended exposure limits. If no exposure limits have been set, maintain airborne concentrations at acceptable levels.

Individual protective measures, e.g. personal protective equipment

General information

Personal protective equipment must be selected in accordance with applicable CEN standards and in consultation with the supplier of personal protective equipment.

Eye/face protection

Wear safety goggles with side shields (or safety glasses). Wear eye protection according to DIN EN 166.



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Skin protection - Hand protection

Chemical-resistant protective gloves (standard EN 374) must be worn for accidental, incidental contact. The use of disposable protective gloves is permitted if they are changed immediately after a splash or spill. Viton gloves are recommended.

Other protective measures

Not available.

Respiratory protection

Put on respirator if ventilation is inadequate. Recommended respiratory protection: Compressed air.

Thermal hazards

Wear suitable heat protective clothing if necessary.

Hygiene measures

Do not smoke during work. Always maintain good personal hygiene, e.g. wash after handling the material and before eating, drinking and/or smoking. Wash work clothes and protective equipment regularly to remove contamination.

Environmental exposure controls

Emissions from ventilation or process equipment should be checked to ensure they comply with environmental regulations. Exhaust scrubbers, filters or engineering changes to process equipment may be required to reduce emissions to acceptable levels.



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9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid.
Form	Compressed, liquefied gas.
Colour	Colourless.
Odour	Neutral.
Melting point/freezing point	Not available.
Boiling point or initial boiling point and boiling range	-19 °C (-2.2 °F).
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosion limits

Explosion limit - lower (%)	No upper and lower explosion limit under standard test conditions, 20°C. Ignition limit above 28°C.
Explosion limit - upper (%)	No lower and upper explosion limit under standard test conditions, 20°C. Ignition limit above 28°C.
Flash point	None(s)
Auto-ignition temperature	550.4 - 559.4 °F (288 - 293 °C).
Decomposition temperature	Not available.
pH value	Not applicable.

Solubility(s)

Solubility (in water)	Partially soluble in water
Vapour pressure	420 kPa at 20 °C
Vapour density	Not available.
Relative density	1.18 g/cm ³ at 20 °C
Particulate properties	Not available.

9.2 Other information

9.2.1 Information on physical hazard classes

No relevant further data available.

9.2.2 Other safety characteristics

Aerosol spray Enclosed space	
Time equivalent	> 300 s/m ³
Aerosol spray Ignition distance	< 15 cm
Evaporation rate	Not applicable.
Explosive properties	Not explosive.
Heat of combustion	< 20 kJ/g
Oxidising properties	Non-oxidising.
VOC	1180 g/l



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10. Stability and reactivity

10.1. Reactivity

The product is stable and not reactive under normal conditions of use, storage or transport.

10.2 Chemical stability

The material is stable under normal conditions.

10.3 Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4 Conditions to avoid

Avoid high temperatures. Avoid temperatures above the decomposition temperature.

10.5 Incompatible materials

Strong oxidising agents.

10.6 Hazardous decomposition products

Oxides of carbon.

Formation of hydrogen fluoride possible.

11. Toxicological information

General information

Exposure to the substance or mixture may cause adverse health effects.

Information on likely routes of exposure

Inhalation

Prolonged inhalation may be harmful.

Skin contact

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

Eye contact

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

Ingestion

May cause discomfort if swallowed. However, ingestion is not a likely primary route of exposure in the workplace.

Symptoms

Exposure may cause short-term irritation, redness or discomfort.

11.1 Information on toxicological effects

Acute toxicity

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

Skin corrosion/irritation

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



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Serious eye damage / eye irritation

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

Respiratory sensitisation

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

Skin sensitisation

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

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.

Specific target organ toxicity (single exposure)

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

Specific target organ toxicity in case of repeated exposure

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

Aspiration hazard

Not likely due to the form of the product.

Mixture-related versus substance-related information

Not available.

11.2 Information on other hazards

Endocrine disrupting properties

This product does not contain any ingredients considered to have endocrine disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 in quantities of 0.1% or more.

Other information

Not available.



12. Environmental information

12.1 Toxicity

Product is not classified as an environmentally hazardous substance. However, this does not exclude the possibility that large quantities of spillage, or if spillage occurs frequently, may have a hazardous or harmful effect on the environment.

12.2 Persistence and degradability

No data are available on the degradability of the ingredients of this mixture.

12.3 Bioaccumulative potential

No data available.

Partition coefficient n-octanol/water (log Kow)

Not available.

Bioconcentration factor (BCF)

Not available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances assessed as vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

12.6 Endocrine disrupting properties

This product does not contain any ingredients considered to have endocrine disrupting properties according to Article 57(f) of REACH, Commission Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 in quantities of 0.1% or more.

12.7 Other adverse effects

The product contains volatile organic compounds that have photochemical ozone creation potential.



13. Notes on disposal

13.1 Waste treatment methods

Residual waste

Dispose of in accordance with local authority regulations. Empty containers or inserts may retain some product residue. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging material

Since empty containers contain product residue, follow the warning label even after the container has been emptied. Take empty containers to an approved waste management facility for recovery or disposal. Do not reuse empty containers.

EU waste code

The waste code number should be determined in consultation with the consumer, the producer and the disposer.

Disposal methods / information

Collect and recover or dispose of in tightly closed containers to an authorised waste disposal facility. The contents are under pressure. Do not puncture, incinerate or crush. Dispose of contents/container in accordance with local/regional/national/international regulations.

Special precautions

Observe all relevant legal requirements for disposal.



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14. Transport information

ADR

14.1 UN number	UN1950
14.2 UN proper shipping name	PRESSURISED GAS PACKAGES
14.3 Transport hazard classes	Class 2.2 Subsidiary hazards - Hazard No. (ADR) Not available. Tunnel restriction code (E) ADR/RID - Classification code: 5A
14.4. packing group	Not applicable
14.5 Environmental hazards	No
14.6 Special precautions for user	Read safety instructions, material safety data sheets and information on emergency procedures before handling.

IATA

14.1 UN number	UN1950
14.2 UN proper shipping name	AEROSOLS
14.3 Transport hazard class(es)	Class 2.2 Subsidiary risk -
14.4 Packing group	Not applicable
14.5 Environmental hazards	No
14.6 Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

14.1 UN number	UN1950
14.2 UN proper shipping name	AEROSOLS
14.3 Transport hazard class(es)	Class 2.2 Subsidiary risk -
14.4 Packing group	Not applicable
14.5 Environmental hazards	Marine pollutant No EmS F-D,S-U Read safety instructions, SDS and emergency procedures before handling.

14.7 Bulk transport by sea in accordance with IMO instruments

Not applicable.

ADR; IATA; IMDG





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15. Regulatory information

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

EU regulations

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer, Annexes I and II, as amended.

Not registered.

Regulation (EU) 2019/1021 on persistent organic pollutants (new edition), as amended.

Not registered.

Regulation (EC) No 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1, as amended.

Not registered.

Regulation (EC) No 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2, as amended.

Not registered.

Regulation (EC) No 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3, as amended.

Not registered.

Regulation (EC) No 649/2012 concerning the export and import of dangerous chemicals, Annex V, as amended.

Not registered.

Regulation (EC) No 166/2006 Annex II European Pollutant Release and Transfer Register, as amended.

Not registered.

Regulation (EC) No 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA.

Not registered.

Authorisations

Regulation (EC) No 1907/2006, REACH Annex XIV List of substances subject to authorisation, as amended.

Not registered.

Restrictions on use

Regulation (EC) No 1907/2006, REACH Annex XVII Substances subject to authorisation for marketing and use

Not registered.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens or mutagens at work, as amended.

Not registered.



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Other EU regulations

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances, as amended.

Not registered.

Other regulations

Classification and labelling of the product according to (EC) Directive 1272/2008 (CLP), as amended.

This safety data sheet complies with the requirements of (EC) Regulation No 1907/2006, as amended.

National regulations

This safety data sheet complies with the following laws, regulations and standards:

Law on Waste Management of Packaging and Packaging Waste of 13 June 2013.

Regulation of the Minister of Health of 11 June 2012 on the categories of dangerous substances and dangerous preparations whose packaging will be fitted with child-resistant closures and a tactile warning of danger.

REGULATION OF THE MINISTER OF HEALTH of 2 February 2011 on the testing and measurement of factors harmful to health in the working environment.

Regulation of the Ministry of Labour and Social Policy of 6 June, 2014. On Maximum Permissible Concentrations and Intensities of Harmful Factors in the Workplace (Journal of Laws 2014, No. 817) Joint Decree No. 25/2000 (Annex 2) on Chemical Safety at Work: Permissible Limits of Biological Exposure (Effect) Indices Decree No. 25/2000. (IX. 30) EüM-SzCsM of the Minister of Health and Minister of Social Affairs and Family on Chemical Safety at Work

ActNo 93 of 1993 on Safety in the Laboratory (1993.évi XCIII.), as amended.

Government Decree No. 220 of 2004 (VII. 21.) on Directives on the Protection of Surface Water Quality

Government Decree No. 98/2001 (VI. 15.) on the conditions for hazardous waste activities and Decree No. 16/2001 (VII. 18.) of the Minister of the Environment on the registration of waste.

Public Act No. XXV of 2000 on Chemical Safety and Application Decree No. 44/2000. (XII.27.) EüM [of the Minister of Health].

When working with chemicals, the national regulations according to Directive 98/24/EEC, as amended, must be followed.

Water hazard class (WGK)

AwSV WGK1

15.2 Chemical safety assessment

No chemical safety assessment has been carried out.



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16. Other information

List of abbreviations

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AGW: Occupational exposure limit value

ATE: Acute Toxicity Estimated Value according to REGULATION (EC) No 1272/2008 (CLP).

CAS: Chemical Abstracts Service.

Upper limit: Upper limit value for short-term exposure.

CEN: European Committee for Standardisation.

CLP: Classification, Labelling and Packaging REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.

GWP: Climate impact.

IATA: International Air Transport Association.

IBC: intermediate bulk container.

IMDG: Transport of Dangerous Goods by Sea.

MAK: Maximum workplace concentration - DFG).

MARPOL: International Convention for the Prevention of Pollution from Ships .

PBT: Persistent, Bioaccumulative and Toxic.

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals).

RID: Règlement International concernant le transport de marchandises dangereuses par chemin de fer (Regulations concerning the international carriage of dangerous goods by rail).

RID: Regulations concerning the international carriage of dangerous goods by rail.

TLV: Threshold Limit Value.

TWA: Time Weighted Average.

VOC: Volatile Organic Compounds.

vPvB: Very Persistent and Very Bioaccumulative.

STEL: Short-term Exposure Limit.

References

Not available

Information on evaluation method for classification of a mixture

The classification for health and environmental hazards has been derived from a combination of calculation methods and, if available, test data.



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Any hazard statement not written out in full in sections 2 to 15 must be reproduced here in full:

H280 Contains gas under pressure; may explode if heated.

Revision information

None.

Training information

Follow training instructions when handling this material.

Disclaimer

We cannot anticipate all conditions under which this information and the product or other manufacturers' products may be used in conjunction with their product. It is the responsibility of the user to ensure safe conditions when handling, storing and disposing of the product and to accept liability for loss, injury, damage or expense due to improper use. The information in this data sheet is based on current knowledge.