according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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

1.1 Product identifier

Trade name	:	TEMPERATURE REDUCTION SPRAY - 200 ML
Product code	:	0890001200
REACH Registration Number	:	01-0000019758-54
Substance name	:	Trans-1,3,3,3-tetrafluoropropene
CAS-No.	:	29118-24-9

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

Use of the Sub- stance/Mixture	:	Refrigerant Professional use product
Recommended restrictions on use	:	Not applicable

1.3 Details of the supplier of the safety data sheet

Company	:	Adolf Wuerth GmbH & Co. KG Reinhold-Würth-Str. 12-17 74653 Künzelsau
Telephone	:	+49 794015 0
Telefax	:	+49 794015 10 00
E-mail address of person responsible for the SDS	:	isi@wuerth.com

1.4 Emergency telephone number

+49 (0)6132 - 84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Aerosols, Category 3

H229: Pressurised container: May burst if heated.



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2.2 Label elements

Labelling (REGULATION (Signal word	EC) :	No 1272/2008) Warning			
Hazard statements	:	H229 Pressurised container: May burst if heated.			
Precautionary statements	:	Prevention:P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.P251 Do not pierce or burn, even after use.			
		Storage: P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.			

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects.

Rapid evaporation of the product may cause frostbite.

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name	:	Trans-1,3,3,3-tetrafluoropropene
CAS-No.	:	29118-24-9
Components		
Remarks	:	No hazardous ingredients



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SECTION 4: First aid measures

4.1 Description of first aid measures Protection of first-aiders : No special precautions are necessary for first aid responders. If inhaled : If inhaled, remove to fresh air. Get medical attention if symptoms occur. In case of skin contact : Wash with water and soap as a precaution. Get medical attention if symptoms occur. In case of eye contact : Flush eyes with water as a precaution. Get medical attention if irritation develops and persists. If swallowed : If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment

: Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media Suitable extinguishing m	iedia :	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	None known.
5.2 Special hazards arising Specific hazards during		Exposure to combustion products may be a hazard to health.
fighting		If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.
Hazardous combustion ucts	orod- :	Carbon oxides Fluorine compounds
5.3 Advice for firefighters		
Special protective equip for firefighters	ment :	Wear self-contained breathing apparatus for firefighting if nec- essary. Use personal protective equipment.
Specific extinguishing m	eth- :	Use extinguishing measures that are appropriate to local cir-



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ods		Use water spray	I the surrounding environment. to cool unopened containers. aged containers from fire area if it is safe to do

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Follow safe handling advice (see section 7) and personal pro- tective equipment recommendations (see section 8).
6.2 Environmental precautions		
Environmental precautions	:	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	 Soak up with inert absorbent material. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handlin	g	
Technical measures	:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation	:	Use only with adequate ventilation.
Advice on safe handling	:	Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as-



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				other ignition sou	heat, hot surfaces, sparks, open flames and rces. No smoking. /ent spills, waste and minimize release to the
	Hygien	e measures	:	flushing systems	emical is likely during typical use, provide eye and safety showers close to the working g do not eat, drink or smoke. Wash contami- fore re-use.
7.2 (Conditi	ons for safe storage,	inc	luding any incom	patibilities
		ements for storage and containers	:	the particular nat	ell-ventilated place. Store in accordance with ional regulations. Do not pierce or burn, even ool. Protect from sunlight.
	Advice	on common storage	:	Self-reactive sub Organic peroxide Oxidizing agents Flammable solids Pyrophoric liquids Pyrophoric solids Self-heating subs	s s stances and mixtures mixtures, which in contact with water, emit
	Storag	e class (TRGS 510)	:	2B	
	Storag	e period	:	24 Months	
	Recom peratur	mended storage tem- e	:	< 40 °C	
7.3 9	Specifi	c end use(s)			
	-	c use(s)	:	No data available	

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Trans-1,3,3,3- tetrafluoropropene	29118-24-9	AGW	1.000 ppm 4.700 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(II)			
	Further information: When there is compliance with the OEL and biological			



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	tolera	nce values, there is no	risk of harming the unborn child

8.2 Exposure controls

Engineering measures

Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.

Personal protective equipmen	t
Eye/face protection :	Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.
	Wear the following personal protective equipment: Safety glasses Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded. Equipment should conform to DIN EN 166
Hand protection Material :	Leather
Material :	Low temperature resistant gloves
Remarks :	Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous sub- stance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufactur- er. Wash hands before breaks and at the end of workday. Breakthrough time is not determined for the product. Change gloves often!
Skin and body protection :	Skin should be washed after contact.
Respiratory protection :	If adequate local exhaust ventilation is not available or expo- sure assessment demonstrates exposures outside the rec- ommended guidelines, use respiratory protection. Equipment should conform to DIN EN 14387
Filter type :	Combined particulates and organic vapour type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	aerosol
Colour	:	clear, colourless



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	Odour		:	ether-like	
	Odour ⁻	Threshold	:	No data available)
	Melting	point/freezing point	:	No data available	
	Initial b range	oiling point and boiling	:	Not applicable	
	Flamma	ability (solid, gas)	:	Not classified as	a flammability hazard
		explosion limit / Upper bility limit	:	No data available	
		explosion limit / Lower bility limit	:	No data available	
	Flash p	oint	:	Not applicable	
	Auto-ig	nition temperature	:	368 °C	
	Decom	position temperature	:	No data available	
	рН		:	Solvent mixture; aqueous solution	pH value determination not possible, no
	Viscosi Visc	ty osity, kinematic	:	Not applicable	
	Solubili Wat	ty(ies) er solubility	:	0,373 g/l insolubl	e
	Partitio octanol	n coefficient: n- /water	:	log Pow: 1,6	
	Vapour	pressure	:	Not applicable	
	Density	,	:	1,17 g/cm³	

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Rela	tive vapour density	: Not applicable	
	icle characteristics Particle size	: Not applicable	
	r information osives	: Not explosive	
Oxic	lizing properties	: The substance or mixture is not classified as oxidizing.	
Eva	poration rate	: Not applicable	

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	If the temperature rises there is danger of the vessels bursting due to the high vapor pressure. Can react with strong oxidizing agents.
10.4 Conditions to avoid		
Conditions to avoid	:	None known.
10.5 Incompatible materials		
Materials to avoid	:	Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

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

Information on likely routes of : Inhalation exposure Skin contact Ingestion Eye contact

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Acute toxicity

Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment

: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment

: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

	Assessment	: The substance/mixture does not contain components consid- ered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
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12.7 Other adverse effects

Global warming potential

Regulation (EU) No 517/2014 on fluorinated greenhouse gases

Product:

100-year global warming potential: 7

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	Ac ar W dis	spose of in accordance with local regulations. cording to the European Waste Catalogue, Waste Codes e not product specific, but application specific. aste codes should be assigned by the user, preferably in scussion with the waste disposal authorities. o not dispose of waste into sewer.
Contaminated packaging	dli If i Ple	npty containers should be taken to an approved waste han- ng site for recycling or disposal. not otherwise specified: Dispose of as unused product. ease ensure aerosol cans are sprayed completely empty cluding propellant)
Waste Code	: Th	e following Waste Codes are only suggestions:
		ed product 05 05, gases in pressure containers other than those men-



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		tioned in 16 05	04
		unused product 16 05 05, gases tioned in 16 05	in pressure containers other than those men-
		uncleaned pack 15 01 06, mixed	
		Properly emptie	Act properly emptied packaging: d, non-contaminated packaging of non- ucts can be supplied to a system for the col- packaging.

SECTION 14: Transport information

14.1 UN number or ID number

ADN	:	UN 1950
ADR	:	UN 1950
RID	:	UN 1950
IMDG	:	UN 1950
ΙΑΤΑ	:	UN 1950
14.2 UN proper shipping name		
ADN	:	AEROSOLS
ADR	:	AEROSOLS
RID	:	AEROSOLS
IMDG	:	AEROSOLS
ΙΑΤΑ	:	Aerosols, non-flammable

14.3 Transport hazard class(es)

		Class	Subsidiary risks
ADN	:	2	2.2
ADR	:	2	2.2
RID	:	2	2.2
IMDG	:	2.2	
ΙΑΤΑ	:	2.2	
14.4 Packing group			
ADN Packing group Classification Code Labels	:	Not assigned by regu 5A 2.2	lation

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	Classif Labels	g group ication Code restriction code		Not assigned by r 5A 2.2 (E)	egulation
	Classif	g group ication Code I Identification Number	:	Not assigned by re 5A 20 2.2	egulation
	IMDG Packin Labels EmS C	g group ode	:	Not assigned by re 2.2 F-D, S-U	egulation
	aircraft Packing	g instruction (cargo	:	203 Y203 Not assigned by re Non-flammable, n	
	Packing ger airc Packing	Passenger) g instruction (passen- craft) g instruction (LQ) g group	:	203 Y203 Not assigned by re Non-flammable, n	
14.	5 Enviro	nmental hazards			
	ADN Enviror	nmentally hazardous	:	no	
	ADR Enviror	nmentally hazardous	:	no	
		nmentally hazardous	:	no	
	IMDG Marine	pollutant	:	no	

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Remarks

: Not applicable for product as supplied.



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SECTION 15: Regulatory information

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

v					
	REACH - Restrictions on the mai the market and use of certain dar mixtures and articles (Annex XVI	:	Not applicable		
	REACH - Candidate List of Subsi Concern for Authorisation (Article			:	Not applicable
	Regulation (EC) No 1005/2009 o plete the ozone layer	on	substances that de-	:	Not applicable
	Regulation (EU) 2019/1021 on pe tants (recast)	e	rsistent organic pollu-	:	Not applicable
Regulation (EC) No 649/2012 of the European Parlia- ment and the Council concerning the export and import of dangerous chemicals				:	Not applicable
	REACH - List of substances subj (Annex XIV)	je	ct to authorisation	:	Not applicable
	Seveso III: Directive 2012/18/EU major-accident hazards involving		•	nent	and of the Council on the control of
	Water hazard class (Germa- : ny)		WGK 1 slightly hazardo Code Number: 9.699 Classification according		
	TA Luft List (Germany) :		5.2.1: Total dust: Not applicable 5.2.2: Inorganic substa Not applicable 5.2.4: Inorganic substa Not applicable 5.2.5: Organic Substan Not applicable 5.2.7.1.1: Carcinogenic Not applicable 5.2.7.1.1: Quartz fine d Not applicable 5.2.7.1.1: Formaldehyc Not applicable 5.2.7.1.1: fibres: Not applicable 5.2.7.1.2: Germ cell mu Not applicable 5.2.7.1.3: Substances t Not applicable	inces nces c su lust de: utaç	es in gaseous form: s: bstance: PM4: gens:



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		5.2.7.2: Poorly de organic substanc Not applicable	egradable, easily enrichable and highly toxic es:
Volatil	e organic compounds	emissions (integr	5/EU of 24 November 2010 on industrial ated pollution prevention and control) compounds (VOC) content: 100 %

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information	:	Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.		
Full text of other abbreviations				

Full text of other abbreviations

DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
DE TRGS 900 / AGW	:	Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA -European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet;



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SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-
Sheet		cy, http://echa.europa.eu/

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

DE / EN