SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

DRY GRAPHITE NANO

Creation date	26th February 2020		
Revision date		Version	1.0

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

1.1. Product identifier

	DRY GRAPHITE NANO
Substance / mixture	mixture
Number	R 34454
UFI	R1E2-73HU-100R-RAP8

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

Mixture's intended use	Grease.

The use descriptors

PROC 7	Industrial spraying
PROC 11	Non industrial spraying

Mixture uses advised against	For professional use only.

1.3. Details of the supplier of the safety data sheet

Supplier

Name or trade name	RETECH, s.r.o.
Address	Vackova 1541/4, Praha 5 - Stodůlky, 155 00 Czech Republic
Identification number (CRN)	25018205
VAT Reg No	CZ25018205
Phone	+420327596428
E-mail	info@retech.cz
Web address	www.retech.com

Competent person responsible for the safety data sheet

Name	RETECH, s.r.o.
E-mail	info@retech.cz

1.4. Emergency telephone number

RETECH, Suchdol 212, 285 02 Suchdol u Kutné Hory, Czech Republic; Telephone number: +420 327 596 128 (7.30-16.00 hour)
Poisoning information centre, Na Bojišti 1, Praha, Czech Republic, Tel.: non-stop +420 224 919 293 or +420 224 915 402, Information on health risks only - acute poisoning of humans and animals.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification of the mixture in accordance with Regulation (EC) No 1272/2008

The mixture is classified as dangerous.

Aerosol 1, H222, H229
Eye Irrit. 2, H319
STOT SE 3, H336

Full text of all classifications and hazard statements is given in the section 16.

Most serious adverse physico-chemical effects

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

Most serious adverse effects on human health and the environment

Causes serious eye irritation. May cause drowsiness or dizziness.

2.2. Label elements

Hazard pictogram

Signal word

Danger

Hazardous substances

propan-2-ol
1-methoxy-2-propanol
butan-1-ol

Hazard statements

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Precautionary statements

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.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash exposed parts of the body thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P410+P412	Protect from sunlight. Do no expose to temperatures exceeding 50 °C/122 °F.

Supplemental information

2.3. Other hazards

Mixture does not contain any substance meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixture of substances and additives specified below.

Mixture contains these hazardous substances and substances with the highest permissible concentration in the working environment

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note.
CAS: 106-97-8 EC: 203-448-7 Registration number: 01-2119474691-32	butane (containing < 0,1 % butadiene (203-450-8))	25-<50	Flam. Gas 1, H220 Press. Gas, H280	1
CAS: 109-87-5 EC: 203-714-2 Registration number: 01-2119664781-31	dimethoxymethane	25-<50	Flam. Liq. 2, H225	1, 2
CAS: 67-63-0 EC: 200-661-7 Registration number: 01-2119457558-25	propan-2-ol	10-<25	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336	1

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note.
CAS: 74-98-6 EC: 200-827-9 Registration number: 01-2119486944-21	propane	2,5-<10,0	Flam. Gas 1, H220 Press. Gas (compressed gas), H280	
CAS: 75-28-5 EC: 200-857-2 Registration number: 01-2119485395-27	isobutane (containing < 0,1 % butadiene (203-450-8))	2,5-<10	Flam. Gas 1, H220 Press. Gas (compressed gas), H280	
Index: 603-064-00-3 CAS: 107-98-2 EC: 203-539-1 Registration number: 01-2119457435-35	1-methoxy-2-propanol	0,1-<1,0	Flam. Liq. 3, H226 STOT SE 3, H336	1
CAS: 71-36-3 EC: 200-751-6 Registration number: 01-2119484630-38	butan-1-ol	0,1-<1,0	Flam. Liq. 3, H226 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335, H336	1

Notes

1 Substance for which exposure limits of Community for working environment exist.

2 Substance of unknown or variable composition, complex reaction products or biological materials - UVCB.

Full text of all classifications and hazard statements is given in the section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet.

If inhaled

Terminate the exposure immediately; move the affected person to fresh air. In the event of issues, find medical advice.

If on skin

Generally the product does not irritate the skin.

If in eyes

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. In the event of issues, find medical advice.

If swallowed

DO NOT INDUCE VOMITING! Provide medical treatment.

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

If inhaled

May cause drowsiness or dizziness.

If on skin

not available

If in eyes

Causes serious eye irritation.

If swallowed

not available

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

not available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water mist.

Unsuitable extinguishing media

Water - full jet.

5.2. Special hazards arising from the substance or mixture

not available

5.3. Advice for firefighters

Use a self-contained breathing apparatus and full-body protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide sufficient ventilation. Use personal protective equipment for work. Keep unprotected persons away.

6.2. Environmental precautions

Do not allow product to reach sewage system or any water course. Inform respective authorities in case of seepage into water course or sewage system.

6.3. Methods and material for containment and cleaning up

Provide sufficient ventilation. Do not flush with water or aqueous cleansing agents.

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace. Open and handle receptacle with care. Do not spray on an open flame or other ignition source. The product should be used only in the areas where it is not in contact with open fire and other ignition sources. No smoking. Take precautionary measures against static discharge. Pressurised container: May burst if heated. Keep away from sources of heating, ignition and direct sunlight. Do not pierce or burn, even after use.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

Storage class 2B - Nádoby se stlačeným plynem (aerosoly)

7.3. Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The mixture contains substances for which occupational exposure limits are set.

European Union

Substance name (component)	Type	Time of exposure	Value	Note	Source
1-methoxy-2-propanol (CAS: 107-98-2)	OEL	8 hours	375 mg/m³	Skin	Commission Directive 2000/39/EC
	OEL	8 hours	100 ppm	Skin	

European Union

Substance name (component)	Type	Time of exposure	Value	Note	Source
1-methoxy-2-propanol (CAS: 107-98-2)	OEL	15 minutes	568 mg/m³	Skin	Commission Directive 2000/39/EC
	OEL	15 minutes	150 ppm	Skin	

United Kingdom of Great Britain and Northern Ireland

Substance name (component)	Type	Time of exposure	Value	Note	Source
butane (containing < 0,1 % butadiene (203-450-8)) (CAS: 106-97-8)	WEL	8 hours	600 ppm		GBR
	WEL	8 hours	1450 mg/m³		
	WEL	1 hour	1810 mg/m³		
	WEL	1 hour	750 ppm		
dimethoxymethane (CAS: 109-87-5)	WEL	8 hours	3160 mg/m³		GBR
	WEL	1 hour	3950 mg/m³		
	WEL	8 hours	1000 ppm		
	WEL	1 hour	1250 ppm		
propan-2-ol (CAS: 67-63-0)	WEL	8 hours	999 mg/m³		GBR
	WEL	1 hour	1250 mg/m³		
	WEL	8 hours	400 ppm		
	WEL	1 hour	500 ppm		
1-methoxy-2-propanol (CAS: 107-98-2)	WEL	8 hours	375 mg/m³	Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.	GBR
	WEL	1 hour	560 mg/m³	Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.	

United Kingdom of Great Britain and Northern Ireland

Substance name (component)	Type	Time of exposure	Value	Note	Source
1-methoxy-2-propanol (CAS: 107-98-2)	WEL	8 hours	100 ppm	Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.	GBR
	WEL	1 hour	150 ppm	Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.	
butan-1-ol (CAS: 71-36-3)	WEL	1 hour	154 mg/m³	Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.	GBR
	WEL	1 hour	50 ppm	Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.	

DNEL

propan-2-ol

Workers / consumers	Route of exposure	Value	Effect	Determining method
Consumers	Oral	26 mg/kg bw/day	Systemic chronic effects	
Consumers	Dermal	319 mg/kg bw/day	Systemic chronic effects	
Workers	Dermal	888 mg/kg bw/day	Systemic chronic effects	
Consumers	Inhalation	89 mg/m³	Local chronic effects	
Workers	Inhalation	500 mg/kg	Systemic chronic effects	

8.2. Exposure controls

Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

Tightly sealed goggles.

Skin protection

Hand protection: Protective gloves resistant to the product. The final selection of the glove material must be carried out on the basis of penetration times, permeation rates and degradation. Material of gloves: Nitrile rubber, NBR. Recommended thickness of the material: ≥ 0.5 mm. Penetration time of glove material: The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed. Other protection: protective workwear.

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. Filter AX/P2.

Thermal hazard

Not available.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	aerosol
Physical state	liquid at 20°C
color	colourless
Odour	characteristic
Odour threshold	data not available
pH	data not available
Melting point/freezing point	data not available
Initial boiling point and boiling range	-44.5 °C
Flash point	-60 °C
Evaporation rate	data not available
Flammability (solid, gas)	Extremely flammable aerosol.
Upper/lower flammability or explosive limits	
flammability limits	data not available
explosive limits	
bottom	1.5 %
upper	19.9 %
Vapour pressure	2100 hPa at 20 °C
Vapour density	data not available
Relative density	data not available
Solubility(ies)	
solubility in water	almost insoluble
solubility in fats	data not available
Partition coefficient: n-octanol/water	data not available
Auto-ignition temperature	data not available
Decomposition temperature	data not available
Viscosity	data not available
Explosive properties	The product does not have explosive properties but can be explosive when blended with air.
Oxidising properties	data not available
data not available	

9.2. Other information

Density	0.671 g/cm^3 at 20 °C
ignition temperature	235 °C
content of organic solvents (VOC)	95.8 %
solid content (dry matter)	29.3 % volume
Max. VOC content in the product in its ready to use condition	642.5 g/l

Product is not selfigniting.

SECTION 10: Stability and reactivity

10.1. Reactivity

not available

10.2. Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3. Possibility of hazardous reactions
Unknown.

10.4. Conditions to avoid
not available

10.5. Incompatible materials
not available

10.6. Hazardous decomposition products
Unknown.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
No toxicological data is available for the mixture.

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

propan-2-ol

Route of exposure	Parameter	Value	Time of exposure	Species	Sex
Oral	LD_{50}	5840 mg/kg		Rat	
Dermal	LD_{50}	13900 mg/kg		Rabbit	
Inhalation	LC_{50}	25000 mg/m³	6 hour	Rat	

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.

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.

Toxicity for specific target organ - single exposure
May cause drowsiness or dizziness.

Toxicity for specific target organ - 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

Acute toxicity
Data for the mixture are not available.

propan-2-ol

Parameter	Value	Time of exposure	Species	Environment
LC_{50}	9714 mg/l	24 hour	Invertebrates (Daphnia magna)	
LC_{50}	9640 mg/l	96 hour	Fishes (Pimephales promelas)	
LOEC	1000 mg/l	8 day	Algae	

12.2. Persistence and degradability
Data not available.

12.3. Bioaccumulative potential
Not available.

12.4. Mobility in soil
Not available.

12.5. Results of PBT and vPvB assessment
Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

12.6. Other adverse effects
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.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste.

Waste management legislation
Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

SECTION 14: Transport information

14.1. UN number
UN 1950

14.2. UN proper shipping name
AEROSOLS

14.3. Transport hazard class(es)
2 Gases

14.4. Packing group
not available

14.5. Environmental hazards
No

14.6. Special precautions for user
Reference in the Sections 4 to 8.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
not available

Additional information

Stowage Code: SW1 Protected from sources of heat. SW22 For AEROSOLS with a maximum capacity of 1 litre: Category A. For AEROSOLS with a capacity above 1 litre: Category B. For WASTE AEROSOLS: Category C, Clear of living quarters. Segregation Code: SG69 For AEROSOLS with a maximum capacity of 1 litre: Segregation as for class 9. Stow "separated from" class 1 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.

Hazard identification No.	(Kemler Code)
UN number	**1950**
Classification code	5F
Safety signs	2.1

Road transport - ADR

Limited quantities	1 L
Excepted quantities	E0
Transport category	2
Tunnel restriction code	(D)

Marine transport - IMDG

EmS (emergency plan)	F-D, S-U
Marine Pollutant	No

SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16th December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006, as amended.

15.2. Chemical safety assessment

not available

SECTION 16: Other information

A list of standard risk phrases used in the safety data sheet

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

Guidelines for safe handling used in the safety data sheet

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.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash exposed parts of the body thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P410+P412	Protect from sunlight. Do no expose to temperatures exceeding 50 °C/122 °F.

Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
DNEL	Derived no-effect level
EC	Identification code for each substance listed in EINECS
EC_{50}	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
IC_{50}	Concentration causing 50% blockade
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC_{50}	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD_{50}	Lethal dose of a substance in which it can be expected death of 50% of the population
LOAEC	Lowest observed adverse effect concentration
LOAEL	Lowest observed adverse effect level
log Kow	Octanol-water partition coefficient
MARPOL	International Convention for the Prevention of Pollution From Ships
NOAEC	No observed adverse effect concentration
NOAEL	No observed adverse effect level
NOEC	No observed effect concentration
NOEL	No observed effect level

OEL	Occupational Exposure Limits
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted no-effect concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative
Acute Tox.	Acute toxicity
Aerosol	Aerosol
Eye Dam.	Serious eye damage
Eye Irrit.	Eye irritation
Flam. Gas	Flammable gas
Flam. Liq.	Flammable liquid
Press. Gas	Gases under pressure
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.