

# Graphene +

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Issue date: 18/12/2020 Revision date: 1/11/2022 Supersedes version of: 18/02/2021 Version: 3.0

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

#### 1.1. Product identifier

Product form : Mixture  
Product name : Graphene +  
UFI : 6M2K-F919-PF88-7HUF

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

##### 1.2.1. Relevant identified uses

Main use category : Professional use  
Use of the substance/mixture : Coating

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

White Diamond  
Lentedreef 14  
België  
T +32 486632580  
[www.white-diamond.be](http://www.white-diamond.be)

#### 1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Belgium	Centre Anti-Poisons/Antigifcentrum c/o Hôpital Militaire Reine Astrid	Rue Bruyn 1 1120 Bruxelles/Brussels	+32 70 245 245	Please dial: 070 245 245 for any urgent questions about intoxication (free of charge 24/7), if not accessible, dial: 02 264 96 30 (standard fee)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 2 H225  
Acute toxicity (oral), Category 4 H302  
Skin corrosion/irritation, Category 2 H315  
Serious eye damage/eye irritation, Category 1 H318  
Specific target organ toxicity – Single exposure, Category 3, Narcosis H336  
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation H335

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

##### Adverse physicochemical, human health and environmental effects

Highly flammable liquid and vapour. Harmful if swallowed. Causes serious eye damage. Causes skin irritation. May cause respiratory irritation. May cause drowsiness or dizziness.

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### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

Contains

Hazard statements (CLP)

: Danger  
: butan-1-ol; n-butanol  
: H225 - Highly flammable liquid and vapour.  
H302 - Harmful if swallowed.  
H315 - Causes skin irritation.  
H318 - Causes serious eye damage.  
H335 - May cause respiratory irritation.  
H336 - May cause drowsiness or dizziness.  
: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.  
No smoking.  
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.  
P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

EUH-statements

: EUH211 - Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

Extra phrases

: For professional users only.

Labelling according to: exemption for packages of a capacity of 125ml or less

Hazard pictograms (CLP)



Signal word (CLP)

Hazardous ingredients

Hazard statements (CLP)

Precautionary statements (CLP)

: Danger  
: butan-1-ol; n-butanol  
: H318 - Causes serious eye damage.  
: P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

EUH-statements

: EUH211 - Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

Extra phrases

: For professional users only.

### 2.3. Other hazards

Contains no PBT/vPvB substances  $\geq 0.1\%$  assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

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### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

Name	Product identifier	Conc. (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ethanol; ethyl alcohol substance with national workplace exposure limit(s) (BE)	CAS-No.: 64-17-5 EC-No.: 200-578-6 EC Index-No.: 603-002-00-5 REACH-no: 01-2119457610-43	10 – 30	Flam. Liq. 2, H225 Eye Irrit. 2, H319
butan-1-ol; n-butanol substance with national workplace exposure limit(s) (BE)	CAS-No.: 71-36-3 EC-No.: 200-751-6 EC Index-No.: 603-004-00-6 REACH-no: 01-2119484630-38	10 – 30	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) STOT SE 3, H335 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H336
Titanium dioxide (nano) substance with national workplace exposure limit(s) (BE) (Note V)(Note W)(Note 10)	CAS-No.: 13463-67-7 EC-No.: 236-675-5 EC Index-No.: 022-006-00-2 REACH-no: 01-2119489379-17	0,1 – 10	Carc. 2, H351
tetraethyl silicate; ethyl silicate substance with national workplace exposure limit(s) (BE); substance with a Community workplace exposure limit	CAS-No.: 78-10-4 EC-No.: 201-083-8 EC Index-No.: 014-005-00-0 REACH-no: 01-2119496195-28	0,1 – 10	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 (ATE=1,5 mg/l/4h) Eye Irrit. 2, H319 STOT SE 3, H335
Graphene	CAS-No.: 10344343-98-0	0,5 - 8	Not classified

#### Specific concentration limits:

Name	Product identifier	Specific concentration limits
ethanol; ethyl alcohol	CAS-No.: 64-17-5 EC-No.: 200-578-6 EC Index-No.: 603-002-00-5 REACH-no: 01-2119457610-43	( 50 ≤C < 100) Eye Irrit. 2, H319

Note 10 : The classification as a carcinogen by inhalation applies only to mixtures in powder form containing 1 % or more of titanium dioxide which is in the form of or incorporated in particles with aerodynamic diameter ≤ 10 µm.

Note V : If the substance is to be placed on the market as fibres (with diameter < 3 µm, length > 5 µm and aspect ratio ≥ 3:1) or particles of the substance fulfilling the WHO fibre criteria or as particles with modified surface chemistry, their hazardous properties must be evaluated in accordance with Title II of this Regulation, to assess whether a higher category (Carc. 1B or 1A) and/or additional routes of exposure (oral or dermal) should be applied.

Note W : It has been observed that the carcinogenic hazard of this substance arises when respirable dust is inhaled in quantities leading to significant impairment of particle clearance mechanisms in the lung. This note aims to describe the particular toxicity of the substance; it does not constitute a criterion for classification according to this Regulation.

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

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures general	: Call a poison center or a doctor if you feel unwell. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact	: Rinse skin with water/shower. Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Rinse mouth. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Serious damage to eyes.

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

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

#### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: Highly flammable liquid and vapour.
Hazardous decomposition products in case of fire	: Toxic fumes may be released. Carbon oxides (CO, CO <sub>2</sub> ).

#### 5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

Emergency procedures	: Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid breathing vapours, mist. Avoid contact with skin and eyes.
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##### 6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
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Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". Concerning disposal elimination after cleaning, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Use explosion-proof equipment. Ground/bond container and receiving equipment. Flammable vapours may accumulate in the container. Use only outdoors or in a well-ventilated area. Do not breathe vapours, mist. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.

Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up. Keep only in the original container in a cool well ventilated place. Keep container closed when not in use.

Incompatible products : Strong oxidizing agents.

Heat and ignition sources : Keep away from heat and direct sunlight.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1 National occupational exposure and biological limit values

Titanium dioxide (nano) (13463-67-7)	
Belgium - Occupational Exposure Limits	
Local name	Titane (dioxyde de) # Titaandioxide
OEL TWA	10 mg/m <sup>3</sup>
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
ethanol; ethyl alcohol (64-17-5)	
Belgium - Occupational Exposure Limits	
Local name	Alcool éthylique # Ethanol
OEL TWA	1907 mg/m <sup>3</sup>
OEL TWA [ppm]	1000 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
butan-1-ol; n-butanol (71-36-3)	
Belgium - Occupational Exposure Limits	
Local name	Alcool n-butylique # n-Butanol
OEL TWA	62 mg/m <sup>3</sup>

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butan-1-ol; n-butanol (71-36-3)	
OEL TWA [ppm]	20 ppm
Remark	D: la mention "D" signifie que la résorption de l'agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l'exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l'agent dans l'air. # D: de vermelding "D" betekent dat de opname van het agens via de huid, de slijmvliezen of de ogen een belangrijk deel van de totale blootstelling vormt. Deze opname kan het gevolg zijn van zowel direct contact als zijn aanwezigheid in de lucht.
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021

tetraethyl silicate; ethyl silicate (78-10-4)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Tetraethyl orthosilicate
IOEL TWA	44 mg/m <sup>3</sup>
IOEL TWA [ppm]	5 ppm
Regulatory reference	COMMISSION DIRECTIVE (EU) 2017/164
Belgium - Occupational Exposure Limits	
Local name	Silicate d'éthyle (Orthosilicate de tétraéthyle) # Ethylsilicaat (Tetraethylorthosilicaat)
OEL TWA	44 mg/m <sup>3</sup>
OEL TWA [ppm]	5 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021

### 8.1.2. Recommended monitoring procedures

No additional information available

### 8.1.3. Air contaminants formed

No additional information available

### 8.1.4. DNEL and PNEC

No additional information available

### 8.1.5. Control banding

No additional information available

## 8.2. Exposure controls

### 8.2.1. Appropriate engineering controls

#### Appropriate engineering controls:

Ensure good ventilation of the work station.

### 8.2.2. Personal protection equipment

#### Personal protective equipment:

Protective clothing. Gloves. Safety glasses. Wear respiratory protection.

#### Personal protective equipment symbol(s):



#### 8.2.2.1. Eye and face protection

##### Eye protection:

Safety glasses. DIN EN 166

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### 8.2.2.2. Skin protection

#### Skin and body protection:

Wear suitable protective clothing. EN 340

#### Hand protection:

Wear suitable gloves resistant to chemical penetration. Chemical resistant gloves (according to European standard NF EN 374 or equivalent)

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Gloves	Nitrile rubber (NBR), Butyl rubber, Polyvinylchloride (PVC)	6 (> 480 minutes)	>0.11		EN 374

### 8.2.2.3. Respiratory protection

#### Respiratory protection:

Provide sufficient air exchange and/or exhaust. Do not breathe gas/vapour/aerosol

Respiratory protection			
Device	Filter type	Condition	Standard
Aerosol mask	(FFP2)	Vapour protection, Protection for Liquid particles	EN 143

### 8.2.2.4. Thermal hazards

No additional information available

### 8.2.3. Environmental exposure controls

#### Environmental exposure controls:

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Not available
Appearance	: Transparent.
Odour	: slight.
Odour threshold	: Not available
Melting point	: Not available
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Highly flammable liquid and vapour.
Explosive limits	: Not available
Lower explosion limit	: 3,3 vol % (Ethanol)
Upper explosion limit	: 15 vol % (Ethanol)
Flash point	: < 23 °C (closed cup)
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: Not available
Solubility	: In water, material is partially soluble.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: Not available
Relative vapour density at 20°C	: Not available

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Particle characteristics : Not applicable

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

#### 9.2.2. Other safety characteristics

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Highly flammable liquid and vapour.

### 10.2. Chemical stability

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 contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

Strong oxidizing agents.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

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

Acute toxicity (oral) : Harmful if swallowed.  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Not classified

Graphene +	
ATE oral	1666,667 mg/kg bodyweight
Titanium dioxide (nano) (13463-67-7)	
LD50 oral	> 5000 mg/kg bodyweight
LD50 dermal	> 10000 mg/kg bodyweight
LC50 Inhalation - Rat (Dust/Mist)	> 6820 mg/l
ethanol; ethyl alcohol (64-17-5)	
LD50 oral rat	10470 mg/kg
butan-1-ol; n-butanol (71-36-3)	
LD50 dermal rabbit	3430 mg/kg
tetraethyl silicate; ethyl silicate (78-10-4)	
LD50 oral rat	> 2000 mg/kg

Skin corrosion/irritation : Causes skin irritation.



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Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified.
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause drowsiness or dizziness. May cause respiratory irritation.

### butan-1-ol; n-butanol (71-36-3)

STOT-single exposure	May cause respiratory irritation. May cause drowsiness or dizziness.
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### tetraethyl silicate; ethyl silicate (78-10-4)

STOT-single exposure	May cause respiratory irritation.
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STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

## 11.2. Information on other hazards

No additional information available

## SECTION 12: Ecological information

### 12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

### Titanium dioxide (nano) (13463-67-7)

LC50 - Fish [1]	> 10000 mg/l
EC50 - Other aquatic organisms [1]	> 10000 mg/l waterflea
EC50 - Other aquatic organisms [2]	> 10000 mg/l

### ethanol; ethyl alcohol (64-17-5)

LC50 - Fish [1]	15,3 g/l (US EPA method E03-05; Pimephales promelas)
EC50 - Crustacea [1]	5,012 g/l (ASTM E729-80; Ceriodaphnia dubia)
ErC50 algae	275 mg/l (OECD 201; Chlorella vulgaris)

### butan-1-ol; n-butanol (71-36-3)

LC50 - Fish [1]	1376 mg/l (OECD 203; Pimephales promelas)
EC50 - Crustacea [1]	1328 mg/l (OECD 202; Daphnia magna)
ErC50 algae	225 mg/l (OECD 201; Raphidocelis subcapitata)
NOEC chronic crustacea	4,1 mg/l (OECD 211; Daphnia magna)

### tetraethyl silicate; ethyl silicate (78-10-4)

LC50 - Fish [1]	> 245 mg/l (EU Method C.1; Danio rerio)
ErC50 algae	> 5,8 mg/l (OECD 201; Raphidocelis subcapitata)

## 12.2. Persistence and degradability

### ethanol; ethyl alcohol (64-17-5)

Persistence and degradability	Readily biodegradable.
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### butan-1-ol; n-butanol (71-36-3)

Persistence and degradability	Readily biodegradable.
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### tetraethyl silicate; ethyl silicate (78-10-4)

Persistence and degradability	Readily biodegradable.
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## 12.3. Bioaccumulative potential

### butan-1-ol; n-butanol (71-36-3)

Partition coefficient n-octanol/water (Log Pow)	1 (25 °C; pH 7)
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## 12.4. Mobility in soil

No additional information available

## 12.5. Results of PBT and vPvB assessment

No additional information available

## 12.6. Endocrine disrupting properties

No additional information available

## 12.7. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information	: Flammable vapours may accumulate in the container.

## SECTION 14: Transport information






In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number or ID number</b>				
UN 1993	UN 1993	UN 1993	UN 1993	UN 1993
<b>14.2. UN proper shipping name</b>				
FLAMMABLE LIQUID, N.O.S. (CONTAINS : ethanol; ethyl alcohol)	FLAMMABLE LIQUID, N.O.S. (CONTAINS : ethanol; ethyl alcohol)	Flammable liquid, n.o.s. (CONTAINS : ethanol; ethyl alcohol)	FLAMMABLE LIQUID, N.O.S. (CONTAINS : ethanol; ethyl alcohol)	FLAMMABLE LIQUID, N.O.S. (CONTAINS : ethanol; ethyl alcohol)
<b>Transport document description</b>				
UN 1993 FLAMMABLE LIQUID, N.O.S. (CONTAINS : ethanol; ethyl alcohol), 3, II, (D/E)	UN 1993 FLAMMABLE LIQUID, N.O.S. (CONTAINS : ethanol; ethyl alcohol), 3, II	UN 1993 Flammable liquid, n.o.s. (CONTAINS : ethanol; ethyl alcohol), 3, II	UN 1993 FLAMMABLE LIQUID, N.O.S. (CONTAINS : ethanol; ethyl alcohol), 3, II	UN 1993 FLAMMABLE LIQUID, N.O.S. (CONTAINS : ethanol; ethyl alcohol), 3, II
<b>14.3. Transport hazard class(es)</b>				
3	3	3	3	3

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ADR	IMDG	IATA	ADN	RID
				
<b>14.4. Packing group</b>				
II	II	II	II	II
<b>14.5. Environmental hazards</b>				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

### 14.6. Special precautions for user

#### Overland transport

Classification code (ADR)	: F1
Special provisions (ADR)	: 274, 601, 640C
Limited quantities (ADR)	: 1I
Excepted quantities (ADR)	: E2
Packing instructions (ADR)	: P001
Mixed packing provisions (ADR)	: MP19
Portable tank and bulk container instructions (ADR)	: T7
Portable tank and bulk container special provisions (ADR)	: TP1, TP8, TP28
Tank code (ADR)	: L1.5BN
Vehicle for tank carriage	: FL
Transport category (ADR)	: 2
Special provisions for carriage - Operation (ADR)	: S2, S20
Hazard identification number (Kemler No.)	: 33
Orange plates	:



Tunnel restriction code (ADR)	: D/E
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#### Transport by sea

Special provisions (IMDG)	: 274
Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP1, TP28, TP8
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-E
Stowage category (IMDG)	: B

#### Air transport

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y341
PCA limited quantity max net quantity (IATA)	: 1L
PCA packing instructions (IATA)	: 353
PCA max net quantity (IATA)	: 5L
CAO packing instructions (IATA)	: 364
CAO max net quantity (IATA)	: 60L
Special provisions (IATA)	: A3

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ERG code (IATA) : 3H

### Inland waterway transport

Classification code (ADN) : F1  
Special provisions (ADN) : 274, 601, 640D  
Limited quantities (ADN) : 1 L  
Excepted quantities (ADN) : E2  
Carriage permitted (ADN) : T  
Equipment required (ADN) : PP, EX, A  
Ventilation (ADN) : VE01  
Number of blue cones/lights (ADN) : 1

### Rail transport

Classification code (RID) : F1  
Special provisions (RID) : 274, 601, 640D  
Limited quantities (RID) : 1L  
Excepted quantities (RID) : E2  
Packing instructions (RID) : P001, IBC02, R001  
Mixed packing provisions (RID) : MP19  
Portable tank and bulk container instructions (RID) : T7  
Portable tank and bulk container special provisions (RID) : TP1, TP8, TP28  
Tank codes for RID tanks (RID) : LGBF  
Transport category (RID) : 2  
Colis express (express parcels) (RID) : CE7  
Hazard identification number (RID) : 33

### 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

#### 15.1.1. EU-Regulations

#### REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(a)	Graphene + ; ethanol; ethyl alcohol ; butan-1-ol; n-butanol ; tetraethyl silicate; ethyl silicate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F
3(b)	Graphene + ; ethanol; ethyl alcohol ; butan-1-ol; n-butanol ; tetraethyl silicate; ethyl silicate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
40.	ethanol; ethyl alcohol ; butan-1-ol; n-butanol ; tetraethyl silicate; ethyl silicate	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.

#### REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

#### REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

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### PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

### POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

### Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

### Seveso Directive (Disaster Risk Reduction)

Seveso III Part I (Categories of dangerous substances)	Qualifying quantity (tonnes)	
	Lower-tier	Upper-tier
P5c FLAMMABLE LIQUIDS Flammable liquids, Categories 2 or 3 not covered by P5a and P5b	5000	50000

### Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

### Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Revision date	Modified	
	Supersedes	Modified	
2.1	Adverse physicochemical, human health and environmental effects	Modified	
2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
2.2	Hazard pictograms (CLP)	Modified	
2.2	Precautionary statements (CLP)	Modified	
2.2	Hazard statements (CLP)	Modified	
2.2	Signal word (CLP)	Modified	
2.2	Extra phrases	Added	
3	Composition/information on ingredients	Modified	
4.1	First-aid measures after eye contact	Modified	
4.1	First-aid measures after inhalation	Modified	
4.1	First-aid measures general	Modified	
4.1	First-aid measures after skin contact	Modified	
4.1	First-aid measures after ingestion	Modified	

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Indication of changes			
Section	Changed item	Change	Comments
4.2	Symptoms/effects after eye contact	Added	
4.2	Symptoms/effects after skin contact	Added	
4.2	Symptoms/effects after inhalation	Added	
4.2	Symptoms/effects	Added	
5.2	Fire hazard	Modified	
6.1	Emergency procedures	Modified	
6.3	For containment	Removed	
7.1	Precautions for safe handling	Modified	
7.1	Hygiene measures	Modified	
7.2	Incompatible products	Added	
7.2	Storage conditions	Modified	
8.2	Respiratory protection	Modified	
8.2	Eye protection	Modified	
8.2	Personal protective equipment	Added	
9.1	Upper explosive limit (UEL)	Added	
9.1	Lower explosive limit (LEL)	Added	
9.1	Solubility	Added	
9.1	Flash point	Modified	
10.1	Reactivity	Modified	
10.5	Incompatible materials	Added	
11.1	ATE oral	Added	
14.1	UN-No. (ADN)	Added	
14.1	UN-No. (IATA)	Added	
14.1	UN-No. (IMDG)	Added	
14.1	UN-No. (ADR)	Added	
14.2	Proper Shipping Name (ADR)	Added	
14.2	Proper Shipping Name (ADN)	Added	
14.3	Danger labels (RID)	Added	
14.3	Danger labels (ADR)	Added	
14.3	Class (UN)	Added	
14.4	Packing group (ADR)	Added	
14.4	Packing group (ADN)	Added	
14.4	Packing group (IATA)	Added	
14.4	Packing group (IMDG)	Added	
14.6	Special provisions (ADN)	Added	
14.6	Packing instructions (IMDG)	Added	
14.6	Transport category (ADR)	Added	

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Indication of changes			
Section	Changed item	Change	Comments
14.6	Special provisions (ADR)	Added	
14.6	Excepted quantities (ADR)	Added	
14.6	Limited quantities (ADR)	Added	
14.6	Tunnel restriction code (ADR)	Added	
14.6	Hazard identification number (Kemler No.)	Added	
14.6	Classification code (ADR)	Added	
15.1	REACH Annex XVII	Modified	
16	Data sources	Modified	
16	Other information	Removed	

Abbreviations and acronyms:	
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ATE	Acute Toxicity Estimate
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LD50	Median lethal dose
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative

Data sources : ECHA (European Chemicals Agency).

Full text of H- and EUH-statements:	
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Carc. 2	Carcinogenicity, Category 2
EUH211	Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.

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### Full text of H- and EUH-statements:

H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Flam. Liq. 2	H225	Calculation method
Acute Tox. 4 (Oral)	H302	Calculation method
Skin Irrit. 2	H315	Calculation method
Eye Dam. 1	H318	Calculation method
STOT SE 3	H336	Calculation method
STOT SE 3	H335	Calculation method

Safety Data Sheet applicable for regions : BE - Belgium

The classification complies with : ATP 12

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