



## Product name: GRAPHENE-XT INK (WATER SOLUTION)

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

- 1.1. Product identifier  
Trade name: Graphene solution.
- 1.2. Relevant identified uses of the substance or mixture and uses advised against  
Recommended use: Chemicals for research.
- 1.3. Details of the supplier of the safety data sheet  
Company: Graphene-XT srl  
Via d'Azeglio, 15  
40123 Bologna (BO),  
Italy  
Fax: +39 051 0821685  
e-mail: info@graphene-xt.com  
Competent person responsible for the safety data sheet: [simone.ligi@graphene-xt.com](mailto:simone.ligi@graphene-xt.com)
- 1.4. Emergency telephone number  
Phone: +39 02 6610 1029 Ospedale Niguarda Ca' Granda (MI) - Italy

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### SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture  
Directive criteria, 67/548/CE, 99/45/EC and following amendments thereof:  
Properties / Symbols:  
None.  
EC regulation criteria 1272/2008 (CLP)  
The mixture is not classified as dangerous according to EC Regulation 1272/2008 (CLP):  
Adverse physicochemical, human health and environmental effects:  
No other hazards
- 2.2. Label elements  
The mixture is not classified as dangerous according to EC Regulation 1272/2008 (CLP).  
Symbols: None  
Hazard statements: None  
Precautionary statements: None  
Special Provisions: None  
Special provisions according to Annex XVII of REACH and subsequent amendments:  
None
- 2.3. Other hazards  
vPvB Substances: None - PBT Substances: None  
Other Hazards:  
No other hazards

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### SECTION 3: Composition/information on ingredients

- 3.1. Substances  
Identification of the substance  
Chemical characterization: C (GRAPHENE) dispersed in water  
0,5 - 1% C (GRAPHENE) Molecular Weight : 12,01 g/mol  
CAS number: 7782-42-5;  
EC number: 231-955-3 3.2.  
REACH No:\
- 3.2 Mixtures  
N.A.



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## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Contact with skin:

Wash with plenty of water and soap.

Contact with eyes:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Swallowing:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

None

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

Treatment:

None

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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Recommended extinguishers:

Water, CO<sub>2</sub>, Foam, Chemical powders, according to the materials involved in the fire. Carbon dioxide (CO<sub>2</sub>).

Extinguishing media which must not be used for safety reasons:

None in particular.

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

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

### 5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

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## SECTION 6: Accidental release measures

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

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

### 6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

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

Wash with plenty of water.

### 6.4. Reference to other sections

See also section 8 and 13

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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

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

Keep away from food, drink and feed.

Incompatible materials:

None in particular.



Instructions as regards storage premises:  
Adequately ventilated premises.

7.3. Specific end use(s)  
None in particular

## SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Sulfur, elemental: **OSHA-PERL** 15 mg/m<sup>3</sup> (sintetico, polvere totale); **ACGIH-TLV**: 2 mg/m<sup>3</sup>

DNEL Exposure Limit Values

N.A.

PNEC Exposure Limit Values

N.A.

8.2. Exposure controls

Eye protection:

Not needed for normal use. Anyway, operate according good working practices.

Protection for skin:

No special precaution must be adopted for normal use.

Protection for hands:

Not needed for normal use.

Respiratory protection:

Not needed for normal use.

Thermal Hazards:

None

Environmental exposure controls:

None

## SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance and colour: Liquid, dark.

Odour: None

Odour threshold: Not Relevant

pH: 6 - 7

Melting point / freezing point: 0 °C

Initial boiling point and boiling range: 100 °C

Solid/gas flammability: Not Relevant

Upper/lower flammability or explosive limits: Not Relevant

Vapour density: 0.62 (Air = 1)

Flash point: Not Relevant

Evaporation rate: Not Relevant

Vapour pressure: 2.3 kPa (@ 20°C)

Relative density: 1 (Water = 1)

Solubility in water: Not Relevant

Solubility in oil: Not Relevant

Partition coefficient (n-octanol/water): Not Relevant

Auto-ignition temperature: Not Relevant

Decomposition temperature: Not Relevant

Viscosity: Not Relevant

Explosive properties: Not Relevant

Oxidizing properties: Not Relevant

9.2. Other information

Miscibility: Not Relevant

Fat Solubility: Not Relevant

Conductivity: Not Relevant

Substance Groups relevant properties Not Relevant

## SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions



- 10.2. Chemical stability  
Stable under normal conditions
- 10.3. Possibility of hazardous reactions  
None
- 10.4. Conditions to avoid  
Strong oxidizers.
- 10.5. Incompatible materials  
None in particular.
- 10.6. Hazardous decomposition products  
COx.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Toxicological information of the mixture:

N.A.

Toxicological information of the main substances found in the mixture:

N.A.

If not differently specified, the information required in Regulation 453/2010/EC listed below must be considered as N.A.:

- a) acute toxicity;
- b) skin corrosion/irritation;
- c) serious eye damage/irritation;
- d) respiratory or skin sensitisation;
- e) germ cell mutagenicity;
- f) carcinogenicity;
- g) reproductive toxicity;
- h) STOT-single exposure;
- i) STOT-repeated exposure;
- j) aspiration hazard.

## SECTION 12: Ecological information

### 12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

N.A.

### 12.2. Persistence and degradability

None

N.A.

### 12.3. Bioaccumulative potential

N.A.

### 12.4. Mobility in soil

N.A.

### 12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

### 12.6. Other adverse effects

None

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.

## SECTION 14: Transport information

### 14.1. UN number

Not classified as dangerous in the meaning of transport regulations.

### 14.2. UN proper shipping name

N.A.

### 14.3. Transport hazard class(es)



- N.A.
- 14.4. Packing group  
N.A.
- 14.5. Environmental hazards  
N.A.
- 14.6. Special precautions for user  
N.A.
- 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code  
No

## SECTION 15: Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Dir. 67/548/EEC (Classification, packaging and labelling of dangerous substances)
  - Dir. 99/45/EC (Classification, packaging and labelling of dangerous preparations)
  - Dir. 98/24/EC (Risks related to chemical agents at work)
  - Dir. 2000/39/EC (Occupational exposure limit values)
  - Dir. 2006/8/EC
  - Regulation (EC) n. 1907/2006 (REACH)
  - Regulation (EC) n. 1272/2008 (CLP)
  - Regulation (EC) n. 790/2009 (ATP 1 CLP)
  - Regulation (EU) n. 453/2010 (Annex I)
  - Regulation (EU) n. 286/2011 (ATP 2 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:  
None

Where applicable, refer to the following regulatory provisions :  
 Directive 2003/105/CE ('Activities linked to risks of serious accidents') and subsequent amendments.  
 Regulation (EC) nr 648/2004 (detergents).  
 1999/13/EC (VOC directive)
- 15.2. Chemical safety assessment  
No

## SECTION 16: Other information

- Full text of phrases referred to in Section 3: none
- This safety data sheet has been completely updated in compliance to Regulation 453/2010/EU. This document was prepared by a competent person who has received appropriate training.
- Main bibliographic sources:
- ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities
  - SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold
  - CCNL - Appendix 1
- Insert further consulted bibliography
- The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.
- This MSDS cancels and replaces any preceding release.
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
  - CAS: Chemical Abstracts Service (division of the American Chemical Society).
  - CLP: Classification, Labeling, Packaging.
  - DNEL: Derived No Effect Level.
  - EINECS: European Inventory of Existing Commercial Chemical Substances.



GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
LTE:	Long-term exposure.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STE:	Short-term exposure.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWATLV:	Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
WGK:	German Water Hazard Class.
N.A.:	N.A.
N.D.:	