

**Product name:** EM-Tec C32 water based conductive graphene paint  
**Document Nr.:** SDS0015001132-01

**Date:** May 10th 2019  
**Version:** 1.0

## Section 1: Identification of the substance or mixture and the company

### 1.1. Product Identifier

EM-Tec C32 water based conductive graphene paint.

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

Against electrostatic charge, mounting SEM samples and making grounding paths for SEM samples

### 1.3. Details of the supplier of the Safety Data Sheet

Vof Micro to Nano  
Wateringweg 79  
2031EK Haarlem  
Netherlands  
Tel: +31(0)85-2013155  
E: info@microtonano.com

### 1.4 Emergency telephone number

112 (NLD) or your national emergency telephone number for chemical spills, leaks, fires, exposures or accidents

## Section 2: Hazards identification

### 2.1. Classification of the substance or mixture

<b>Physical:</b>	None
<b>Health:</b>	Eye irritation, category 2 Skin irritation, category 2
<b>Environment:</b>	None
<b>Other hazards:</b>	None

### Classification according to Regulation EC Nr. 1272/2008

<b>Health:</b>	R36: Irritating to eyes R38: Irritation to skin
<b>Physical</b>	Not classified
<b>Environment:</b>	Not classified
<b>Other hazards:</b>	Not classified



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## 2.2 Labelling elements

### Labelling accordance to Regulation EC Nr. 1272/2008

Hazard pictogramm:



**Signal word:**

**Warning**

**Hazard statement(s):**

H315: Causes skin irritation

H319: Causes serious eye irritation

**Precautionary statement(s):**

P102: Keep out of reach of children

P233: Keep container tightly closed

P280: Wear protective gloves/protective clothing/eye protection/face protection

P337/313: If eye irritation persists; get medical advice/attention

P501-2: Dispose of contents/container to an authorised waste collection point

**Supplemental hazard info:**

None

## 2.3 Other hazards

None

## Section 3: Composition / information on components

### 3.1. Substances

Not applicable



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## 3.2 Mixtures

1. CAS Nr 2. EC Nr 3. Index Nr 4. REACH No	% (weight)	Name	Classification according to directive 67/548/EEC [DSD]	Classification according to regulation Nr 1272/2008 [CLP]
7782-42-5 231-955-3 not available 01-2119486977-12-xxxx	5-15 %	graphite	R48/20	STOT-RE category 2; H373
Not available not available not available not available	0.5-1 %	Proprietary dispersant		
7732-18-5 231-791-2 not available not available	94-80 %	Water		

(\* Explanation notes: see section 16)

## Section 4: First aid measures

### 4.1. Description of first aid measures

- Contact with eyes:** Rinse cautiously with water for several minutes. If possible, remove contact lenses. Continue rinsing.
- Contact with skin:** Wash with water and soap.  
Seek medical attention if irritation persists.
- Inhalation:** Fresh air, keep warm and at rest.  
Seek medical attention if ill effects occur
- Ingestion:** If swallowed, do not induce vomiting  
Seek immediate medical advice

### 4.2. Important symptoms and effects, either immediate or delayed

- Inhalation:** Excessive inhalation of aerosols may give rise to nausea, headaches and dizziness
- Ingestion:** May cause respiratory and digestive tract irritation  
Symptoms: sore throat, abdominal pain, nausea, vomiting
- Skin contact:** Mildly irritating to skin



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**Eye contact:** Symptoms: redness and pain  
Irritating to eyes  
Symptoms: redness and pain, impaired vision

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

**General advice:** If you feel unwell, seek medical advice; show product label if possible  
If symptoms persist, always call a doctor

## Section 5: Firefighting Measures

### 5.1. Extinguishing media

Water spray, foam, carbon dioxide or dry agent

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

Not a fire hazard

### 5.3 Advice to firefighters

Wear full protective clothing. Wear self-contained breathing apparatus.

## Section 6: Accidental release measures

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

Wear suitable protective clothing including eye/face protection

### 6.2 Environmental precautions

Do not allow to enter public sewers and waterways

### 6.3 Methods and material for containment and clean up

Absorb spillage in suitable inert material  
Clean up spills immediately  
Collect spillage, absorbed spillage and wipes in a suitable container for disposal  
Wash spill area with soap and water to remove last traces of residue



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## 6.4 Reference to other sections

For further information see section 8

## Section 7: Handling and storage

### 7.1. Precautions for safe handling

Do not breathe aerosols or vapours  
Ensure adequate ventilation  
Avoid contact with skin and eyes  
Wash thoroughly after use  
Wear protective gloves/protective clothing/eye protection/face protection  
Have eyewash bottles available

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

Keep container tightly close, in a cool, well ventilated place  
For safe storage, store between 5° C and 30° C  
Protect from freezing  
Keep out of reach of children

### 7.3 Specific end uses(s)

Against electro-static charge  
Making grounding paths  
Attaching SEM specimens

## Section 8: Exposure control and personal protection

### 8.1. Control parameters

#### Exposure limits

#### Occupational exposure limits (OEL)

Ingredient	Material Name	Source	TWA	STEL	Peak	Notes
Graphite	Graphene	EU	2mg/m <sup>3</sup>	15mg/m <sup>3</sup>	Not available	Not available
EM-Tec C32	Graphene paint	EU	Not available	Not available	Not available	Not available



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## 8.2 Exposure controls

**Control procedures:** Ensure adequate ventilation  
**Personal protection:** Take precautions to avoid contact with eyes and skin when handling the product  
**Inhalation:** In case of insufficient ventilation, wear suitable respiratory equipment:  
**Hands and skin:** Wear suitable gloves against chemicals; recommended gloves:  
Nitrile  
**Eyes:** Wear safety goggles or full-face protection

## Section 9: Physical and chemical properties

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

**Appearance/physical state:** Liquid  
**Colour:** Black  
**Odour:** none  
**pH** 7  
**Boiling point/range:** 100°C  
**Melting point/range:** 0°C  
**Flash point:** Not applicable  
**Evaporation rate:** Not available  
**Explosion limits: upper limit:** Not available  
**lower limit:** Not available  
**Vapour pressure:** Not determined  
**Relative density:** 1.1 g/cm<sup>3</sup> @ 20°C  
**Solubility in water:** Dispersible  
**Auto-ignition:** Not applicable  
**Viscosity:** <= 10,000cp

### 9.2 Other information

**VOC:** None

## Section 10: Stability and reactivity

### 10.1. Reactivity

No hazardous reactions known if used for its intended purposes

### 10.2 Chemical stability

Stable



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## 10.3 Possibility of hazardous reactions

No hazardous reactions known if used for its intended purposes

## 10.4 Conditions to avoid

Avoid overheating and keep away from incompatible materials

## 10.5 Incompatible materials

Strong oxidising agent

## 10.6 Hazardous decomposition products

CO, CO<sub>2</sub>

## Section 11: Toxicological information

### 11.1. Information on toxicological effects

#### Information on likely routes of exposure:

- Inhalation:** Inhalation may give rise to nausea, headaches and dizziness  
**Skin contact:** Irritation to skin  
**Eye contact:** Irritation to eyes  
**Ingestion:** Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea

#### Toxicological data:

Ingredient	Toxicity	Irritation
Graphite (graphene)	Inhalation (rat) LC50: >2mg/l 4h	Eye (rabbit): non-irritating
	Oral (rat) LD50: >2000 mg/kg	Skin (rabbit): non-irritating
Water	Oral (rat) LD50: ≥90000 mg/kg	
EM-Tec C32 water based conductive graphene paint	Not available	Not available



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## Section 12: Ecological information

### 12.1. Toxicity

Not classified

### 12.2 Persistence and degradability

No experimental data available

### 12.3 Bio accumulative potential

No experimental data available

### 12.4 Mobility in soil

No information available

### 12.5 Results of PBT and vPvB assessment

No information available

### 12.6 Hazardous decomposition products

No experimental data available

## Section 13: Disposal considerations

### 13.1. Waste treatment methods

**Product:** This material and its container must be disposed of in a safe way.  
Do not discharge into drains or the environment, dispose to an authorised waste collection point.

**National regulations:** Disposal should be in accordance with local, state or national legislation.

## Section 14: Transport information

### 14.1. UN number

UN-number: N/A

### 14.2 UN proper shipping name



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**Proper shipping name:** N/A

## 14.3 Transport hazard class(es)

**Class:** N/A  
**ADR/RID-Classification code:** N/A

## 14.4 Packing group

**Packing:** N/A

## 14.5 Incompatible materials

**ADR/RID- Environmentally hazardous:** N/A  
**IMDG-Marine pollutant:** N/A  
**IATA/ICAO-Environmentally hazardous:** N/A

## 14.6 Special precautions for user

**ADR/RID-Tunnel code:** N/A  
**IMDG-Ems:** N/A  
**IATA/ICAO-PAX:** N/A  
**IATA/ICAO-CAO:** N/A

## 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC code

Not applicable

## Section 15: Regulatory information

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

**UN-number:** N/A

### 15.2 Chemical safety assessment

No information available



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## Section 16: Other information

### RoHS Directive Compliant

This product is fully compliant with the directive 2100/65/EU Annex II (RoHS). It does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's or PBDE's.

### WEEE

This product is not a piece of electrical or electronic equipment, and it therefore not governed by Directive 2002/96/EC on waste electrical and electronic equipment (WEEE)

### Abbreviations:

Asp. Tox	Aspiration hazard
Carc.	Carcinogenicity
Exp.	Exposure
Flam.	Flammable
GHS	Global Harmonised System of Classification of Labelling Chemicals
Irrit.	Irritant
LC50	Lethal Concentration 50%
LCLo	Lowest published lethal concentration
LD50	Lethal Dose 50%
N/A	Not applicable
N/E	Not estimated
PBT	Persistent Bioaccumulative and Toxic
WEL	Workplace Exposure Limit
Repr.	Reproductive toxicant
RoHS	Restriction of Hazardous Substance
SEM	Scanning Electron Microscope
STEL	Short-Term Exposure Limit
STOT	Specific Target Organ Toxicity
TCLo	Lowest published toxic concentration
vPvB	very Persistent and very Bioaccumulative
WEEE	Waste Electrical and Electronic Equipment

### DSD / DPD label elements

None

### Full Text Risk and Hazard codes

H315 – Causes skin irritation.

H319 – Causes serious eye irritation.

H335 – May cause respiratory irritation.

H373 – May cause damage to organs through prolonged or repeated exposure.



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R36 – Irritating to eyes.  
R38 – Irritating to skin.  
R48/20 – Danger of serious damage to health by prolonged exposure through inhalation

#### Safety advice:

S01 – Keep locked up.  
S02 – Keep out of reach of children.  
S09 – Keep container in a well-ventilated place.  
S13 – Keep away from food, drink and animal feeding stuff.  
S20 – When using, do not eat or drink.  
S23 – Do not breath gas/fumes/vapour/spray.  
S26 – In case of contact with eyes, rinse with plenty of water and seek medical help.  
S281 – After contact with skin, wash immediately with detergent and plenty of waterways.  
S29 – Do not empty in drains.  
S35 – This material and its container must be disposed of in a safe way.  
S36 – Wear suitable protective clothing.  
S37 – Wear suitable gloves.  
S38 – In case of insufficient ventilation, wear suitable respiratory equipment.  
S39 - Wear eye / face protection.  
S40 – In case of insufficient ventilation, wear suitable respiratory equipment.  
S41 – In case of fire and/or explosion; DO NOT breathe fumes.  
S43 – In case of fire use water, foam or dry agent  
S45 – In case of accident or if you feel unwell, immediately contact Doctor or Poisons information center (show label if possible).  
S46 – If swallowed, seek immediate medical advice and show label if possible.  
S56 – Dispose of this material and its container at hazardous or special waste collection point.  
S57 – Use appropriate container to avoid environment contamination.  
S61 – Avoid release to the environment  
S63 – In case of accident by inhalation; remove casualty to fresh air and keep at rest  
S64 – If swallowed, rinse mouth with water (only if person is conscious)

This product should be stored, handled and used in accordance with good industrial hygiene practices and in accordance with any legal regulation.

The information contained herewith is based on the present state of our knowledge and is intended to describe the product from the point of view of safety requirements. It does not guarantee any specific properties.

It is the responsibility of the user to query and verify any information seeming suspect or where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, state, federal and international regulations.



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