

1.- Identification of the substance/preparation and of the company

- **Identification of the product:** Mesoporous carbon solution (DRP-MCSOL)
- **Chemical family:** Carbon (graphitized carbon)
- **Use of the substance/preparation:** For Research Use Only
- **Manufacturer/supplier identification:** DropSens, S.L.
Ed. CEEI, locales 4 y 5
Parque Tecnológico de Asturias
Llanera - 33428 (Asturias) SPAIN
Tel.- +34 985 27 76 85 FAX.- +34 985 27 76 85
E-mail.- info@dropsens.com
Internet Web Site: www.dropsens.com
- **Emergency phone:** DropSens, S.L. +34 985 27 76 85

2.- Hazards identification

Caution! To the best of our knowledge the toxicological properties of this solution has not been thoroughly investigated. The present substance has been classified according to hazards identification of its components.

Classification of the mixture:

According to Regulation CLP (EC) No1272/2008

- Flammable liquids (Category 3)
- Acute toxicity (Category 4)
- Eye irritation (Category 2)
- Skin irritation (Category 2)
- Respiratory sensitization (Category 1)
- Reproductive toxicity (Category 1B)
- Carcinogenicity (Category 2)

Label elements:

- Signal word: Danger, Warning

Hazard statements

- H226 Flammable liquid and vapour
- H312 Harmful in contact with skin
- H319 Causes serious eye irritation
- H332 Harmful if inhaled
- H360 May cause harm to the unborn child
- H351 suspected of causing cancer

Precautionary statements

- P201 Obtain special instructions before use
- P263 Avoid contact during pregnancy
- P280 Wear protective gloves/protective clothing/ eye protection/ face protection
- P305 + P338 + P351 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P281 Use personal protective equipment as required

Physical hazards: Carbon black solution is electrically conductive. Care should be taken.

3.- Composition/Information on ingredients

- **Carbon black** Synonyms: carbon black, graphitized carbon.
Molecular weight: 12,01 g/mol
CAS: 1333-86-4
EC number: 215-609-9
Formula: C
- **N,N-Dimethylformamide** Synonyms: DMF, Formic acid dimethylamide
CAS: 68-12-2
Molecular weight: 73.09 g/mol
EC index no.: -616-001-00-X
EC number: 200-679-5
Formula: C₃H₇NO

4.- First aid measures

- **After inhalation:** Fresh air. If it is necessary, give artificial respiration with oxygen. Summon physician if necessary.
- **After skin contact:** Wash skin with soap and copious amounts of water.
- **After ingestion:** Make victim drink plenty of water, induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
- **After eye contact:** Rinse out with plenty of water with the eyelid held wide open for at least 15 minutes. Summon eye specialist.
- **In case of persisting adverse effects:** Consult a physician.
- **General:** Show this safety data sheet to the doctor in attendance.

5.- Fire-fighting measures

- **Suitable extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- **Special hazards arising from the substance:** Nitrous oxides, carbon dioxide and carbon monoxide. May form toxic fumes.
- **Special protective equipment for fire fighting:** Wear self contained breathing apparatus for fire fighting if necessary.

6.- Accidental release measures

- **Person-related precautionary measures:** Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Use personal protective equipment.
- **Environmental precautions:** Do not discharge into the drains/surface waters/groundwaters.
- **Procedures for cleaning/absorption:** Sweep up and shovel. Keep in suitable, closed containers for disposal.

7.- Handling and storage

- **Handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Normal measures for preventive fire protection.
- **Storage:** Keep in original container, tightly closed. Store at +15°C to +25°C.
- **Further information on storage conditions:** Keep away from sources of heat and ignition. Do not store together with oxidizing agents.

8.- Exposure controls/personal protection

Exposure controls

- Respiratory protection Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air purifying respirators are appropriate use a full-face particle respirator type N100 US or type P3 EN 143 respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full face supplied air respirator. Use respirators and components tested

- and approved under appropriate government standards such as NIOSH or CEN.
- Hand protection For prolonged or repeated contact use protective gloves to satisfy the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it. Immersion protection: nitrile rubber, minimum layer thickness 0,11 mm, break through time > 480 min. Splash protection, material nitrile rubber, minimum layer thickness: 0,11 mm; break through time > 30 min.
 - Eye protection Use safety glasses with side-shields conforming to EN166.
 - Skin and body protection Choose body protection according to the amount and concentration of the dangerous substance at the work place.
 - Hygiene measures Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9.- Physical and chemical properties

- **General information:**
 - Form: liquid
 - Colour: black
 - Odour: weakly amine-like
- **Important health, safety and environmental information:**
 - pH value: 6 at 25°C
 - Boiling temperature: no data available
 - Flash point: no data available
 - Explosion limits (caused by DMF presence) 2.2% (low) to 16% (high)
 - Vapour pressure: not determined
 - Density: not determined
 - Solubility in water (20°C): soluble

10.- Stability and reactivity

- **Substances to be avoided:** strong oxidizing agents and halogenated hydrocarbons.
- **Conditions to avoid:** strong heating.
- **Hazardous decomposition products:** Hazardous decomposition products formed under fire conditions- Carbon oxides. Nitrogen oxides.
- **Further information:** Stable under recommended storage conditions.

11.- Toxicological information

Toxicological information related to Graphite and N,N-Dimethylformamide:

	Graphite	N,N-Dimethylformamide
LD ₅₀ (oral, rat)	>2000mg/kg	2800mg/kg
LC ₅₀ (inhalation, rat)	-	9-15 mg/L (4h)
LD ₅₀ (dermal rabbit)	Non irritant (4h)	1500mg/kg
Eye irritation test (rabbit)	Slight irritant	Irritation

12.- Ecological information:

To the best of our knowledge the ecological effects have not been thoroughly researched.

Ecological information related to Graphite

Graphite is a naturally occurring substance that is found throughout the world. To our knowledge, there is no reliable data regarding its bio-accumulation or mobility in environmental media, there is not data to suggest that it should be considered as an environmental hazard.

Ecological information related to N,N-Dimethylformamide

Eco-toxic effects:

Fish toxicity:

- L. macrochirus CL₅₀ : 6300 mg/l / 96h.

- Onchorhynchus mykiss CL₅₀ : 9800 mg/l / 96h.

- P. promelas CL₅₀: 10600 mg/l / 96h.

Daphnia toxicity: Daphnia magna EC₅₀: 15700 mg/l / 48h.

Algal toxicity:

- Desmodesmus subspicatus IC₅₀ > 500 mg/l / 96h.

- Sc. Quadricauda IC₅ : 10 mg/l

Bacterial toxicity:

- Photobacterium phosphoreum CE₅₀: 20000 mg/l / 5min (Microtox test).

Mobility: log P (o/w): -0.85 (experimentally).

Bioaccumulative potential: Non bioaccumulative.

Persistence and degradability:

- Biological degradability > 90% / 28d.

- Biological degradability: good.

13.- Disposal considerations

- **Product**: Observe all federal, state, and local environmental regulations.
- **Packaging**: Dispose in compliance with federal regulations. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled

14.- Transport information

- **Road transport ADR/RID**:
 - UN-Nº: 2265
 - Class 3 Packaging group III
 - Proper shipping name: Preparation containing N,N-Dimethylformamide
- **Sea transport IMDG**:
 - UN-Nº: 2265
 - Class 3 Packaging group III
 - Marine pollutant: NO
 - Proper shipping name: Preparation containing N,N-Dimethylformamide
- **Air transport IATA**:
 - UN-Nº: 2265
 - Class 3 Packaging group III
 - Proper shipping name: Preparation containing N,N-Dimethylformamide

15.- Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) 1907/2006 and/or 67/548/EEC and/or 1999/45/EC.

R-phrases

- R61 May cause harm to the unborn child.
- R20/21 Also harmful by inhalation and in contact with skin.
- R36/37 Irritating to eyes and respiratory system

S-phrases

- S26 In case of contact with eyes rinse immediately with plenty of water and seek medical advice.
- S36 Wear suitable protecting clothing
- S45 In case of accident or if you feel unwell, seek medical advice immediately (show this MSDS if possible)

16. Other information

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Author: Laura Fernández

Revised by: Pablo Fanjul Bolado (Director I+D, DropSens, S.L.)

The contents and format of this MSDS are in accordance with EEC Commission Directive 1907/2006.

Disclaimer: DropSens S.L. provides the information contained herein in good faith and makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the

MATERIAL SAFETY DATA SHEET

Mesoporous carbon solution
According to Regulation EC 1907/2006
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