

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006

Version 1.0, revision date 04/01/13

1.0 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name: Carbon Nanotubes, multiwall, free and substrate grown

Product number : N/A

Brand : Vantablack

CAS No : 308068-56-6

1.2 Relevant identified uses of the substances or mixture and uses advised against

Identified uses : manufacture of substances and free standing parts

1.3 Details of the supplier of the safety data sheet

Company : Surrey NanoSystems Ltd
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London, EC3v 3ND
UNITED KINGDOM

Telephone : +44 (0)1273 515899

Email : enquiries@surreynanosystems.com

1.4 Emergency telephone number

Phone : +44 (0) 7984181146

2.0 HAZARDS IDENTIFICATION

2.1 Classification of the substances or mixture

Classification according to regulation (EC) No 1272/2008 (EU-GHS/CLP)

Eye irritation (Cat 2)
Specific target organ toxicity – single exposure (Cat 3)

Classification according to EU Directives 67/548/ECC or 1999/45/EC

Irritating to eyes and respiratory system

2.2 Label Elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Pictogram	
Signal word	Warning

Hazard statement(s)


H319	Causes serious eye irritation
H335	May cause respiratory irritation

Precautionary statements

P261	Avoid breathing dust/fume/mist/vapours/spray
P305 + P531 + P338	IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.

Supplemental Hazard Statements	None
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According to European Directive 67/548/ECC as amended

Hazard symbol(s)	
R-phrase (s) R36/37	Irritating to eyes and respiratory system
S-phrase(s) S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S36	Wear suitable protective clothing

Caution – substance not yet tested completely

Other hazards – none

3.0 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Multiwall carbon nanotubes, MWCNT, Vantablack
Component	:	CAS-No 308068-56-6

4.0 FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a doctor. Show this MSDS to the doctor in attendance

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a doctor.

In case of skin contact

Wash off with soap and water. Consult a doctor

In case of eye contact

Rinse well with plenty of water for at least 15 minutes and consult a doctor

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5.0 FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol resistant foam, dry chemical or carbon dioxide

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for fire-fighters

Wear self contained breathing apparatus for fire fighting if required.

5.4 Further information

No data available

6.0 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use PPE. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions

Do not let the product enter drains

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in a suitable, closed container for disposal.

6.4 Reference to other sections

For disposal see section 13

7.0 HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventative fire protection.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool dry place. Keep container closed and in a dry ventilated place.

7.3 Specific end uses

Data not available

8.0 EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the work day.

Personal protective equipment

Eye/face protection

Safety glasses with side shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin protection

Handle with gloves. Inspect gloves prior to use. Use proper glove removal technique to avoid skin contact with this material. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected gloves have to satisfy the specifications of EU directive 89/686/EEC and the standard EN 374 derived from it.

Body protection

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposure use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9.0 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance	Form: solid
b) Odour	no data available
c) Odour threshold	no data available
d) PH	no data available
e) Melting point	3,652 – 3697 °C – lit
f) Initial boiling point	no data available
g) Flash point	no data available
h) Evaporation point	no data available
i) Flammability (solid/gas)	no data available
j) LEL/LFL	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	0.05 mg/cm ⁻²
n) Water solubility	Insoluble
o) Auto ignition temperature	no data available
p) Decomposition temperature	no data available
q) Viscosity	no data available

r) Explosive properties no data available

s) Oxidizing properties None

9.2 Other safety information

No data available

10.0 STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

No data available

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products – no data available

11.0 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity – single exposure

Inhalation – May cause respiratory irritation

Specific target organ toxicity – repeated exposure

No data available

Aspiration hazard

No data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation
Ingestion	May be harmful if swallowed
Skin	May be harmful if absorbed through skin. May cause skin irritation
Eyes	Causes serious eye irritation

Signs and symptoms of exposure

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Additional information

RTECS: not available

12.0 ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

16.0 OTHER INFORMATION

Further information

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