

# Graphene Coating

## Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.  
Issue date: 11/27/2024 Revision date: 11/27/2024 Version: 1.0

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : Graphene Coating  
Product code : P106

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Ceramic and graphene spray coating  
Recommended use : Industrial use, Consumer use

#### 1.3. Supplier

##### Manufacturer

Superior Products  
6962 Highway 111  
S. Roxana, IL, 62087  
USA  
T 800 424-9300, Contact Phone: 618 254-7400 - F 618 254-7421  
[sds@superiorproducts.com](mailto:sds@superiorproducts.com)

#### 1.4. Emergency telephone number

Emergency number : 1-800-424-9300

### SECTION 2: Hazard(s) identification

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

##### GHS US classification

Flam. Liq. 3	Flammable liquid and vapor
Acute Tox. 4 (Oral)	Harmful if swallowed
Repr. 2	Suspected of damaging fertility or the unborn child

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Warning

Hazard statements (GHS US) :

Flammable liquid and vapor  
Harmful if swallowed  
Suspected of damaging fertility or the unborn child

Precautionary statements (GHS US) :

If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Keep container tightly closed.  
Ground/Bond container and receiving equipment.  
Use explosion-proof electrical/ventilating/lighting equipment.  
Use only non-sparking tools.

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Take precautionary measures against static discharge.  
Wash hands, forearms and face thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/protective clothing/eye protection/face protection.  
If exposed or concerned: Get medical advice/attention.  
If swallowed: Call a poison center or doctor if you feel unwell.  
Rinse mouth.  
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
Store in a well-ventilated place. Keep cool.  
Store locked up.  
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

4.95% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%
Octamethylcyclotetrasiloxane	CAS-No.: 556-67-2	*
2-Butoxyethanol	CAS-No.: 111-76-2	*
Decamethylcyclopentasiloxane	CAS-No.: 541-02-6	*

\*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.  
First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.  
First-aid measures after skin contact : If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash clothing before re-using. Get medical attention if irritation develops and persists.  
First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.  
First-aid measures after ingestion : IF SWALLOWED: Rinse mouth. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call a POISON CENTER or doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.  
Symptoms/effects after skin contact : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.  
Symptoms/effects after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.  
Symptoms/effects after ingestion : Harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

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Chronic symptoms : Suspected of damaging fertility or the unborn child.

### 4.3. Immediate medical attention and special treatment, if necessary

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.  
Unsuitable extinguishing media : Do not use water jet.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Flammable liquid and vapor. Products of combustion may include, and are not limited to: oxides of carbon.  
Explosion hazard : May form flammable/explosive vapor-air mixture.

### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Move containers away from the fire area if this can be done without risk. Cool closed containers exposed to fire with water spray.  
Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

## SECTION 6: Accidental release measures

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

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Use special care to avoid static electric charges. Remove all sources of ignition.

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent entry to sewers and public waters.

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

For containment : Stop leak if safe to do so. Remove all sources of ignition. Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.  
Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Provide ventilation.

### 6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.

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Precautions for safe handling	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. 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.
Hygiene measures	: Take off immediately all contaminated clothing and wash it before reuse. Wash hands, forearms and face thoroughly after handling.

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

Technical measures	: Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool and well-ventilated place. Store locked up.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

<b>Octamethylcyclotetrasiloxane (556-67-2)</b>	
<b>USA - AIHA - Occupational Exposure Limits</b>	
WEEL TWA	10 ppm
<b>Decamethylcyclopentasiloxane (541-02-6)</b>	
<b>USA - AIHA - Occupational Exposure Limits</b>	
WEEL TWA	10 ppm
<b>2-Butoxyethanol (111-76-2)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
Local name	2-Butoxyethanol (EGBE)
ACGIH OEL TWA	20 ppm
Remark (ACGIH)	TLV® Basis: Eye & URT irr. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
Regulatory reference	ACGIH 2020
<b>USA - ACGIH - Biological Exposure Indices</b>	
BEI (BLV)	200 mg/g Kreatinin Parameter: Butoxyacetic acid with hydrolysis - Medium: urine - Sampling time: end of shift
<b>USA - OSHA - Occupational Exposure Limits</b>	
Local name	2-Butoxyethanol
OSHA PEL TWA	240 mg/m <sup>3</sup>
OSHA PEL TWA	50 ppm
Limit value category (OSHA)	prevent or reduce skin absorption
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
<b>USA - IDLH - Occupational Exposure Limits</b>	
IDLH	700 ppm

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### 2-Butoxyethanol (111-76-2)

#### USA - NIOSH - Occupational Exposure Limits

NIOSH REL (TWA)	24 mg/m <sup>3</sup>
NIOSH REL (TWA)	5 ppm
US-NIOSH chemical category	SK: SYS-DIR(IRR) Apr 2011

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Wear suitable gloves. Consult glove manufacturer's product information on material suitability and material thickness.

#### Eye protection:

Safety glasses or goggles are recommended when using product.

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. SDSs cannot provide detailed and complete respiratory protection guidelines. Selection of respiratory protection must be done by a qualified person who has assessed the work environment.

#### Other information:

Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

## SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Color	: No data available
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Flammable liquid and vapor.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available

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Explosive properties : No data available  
Oxidizing properties : No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known under normal conditions of use.

### 10.2. Chemical stability

Stable under normal conditions. May form flammable/explosive vapor-air mixture.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Heat. Incompatible materials. Sources of ignition. Direct sunlight.

### 10.5. Incompatible materials

Strong oxidizers.

### 10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon. May release flammable gases.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

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

Graphene Coating	
ATE US (oral)	1585.723 mg/kg body weight
Unknown acute toxicity (GHS US)	4.95% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)
Octamethylcyclotetrasiloxane (556-67-2)	
LD50 oral rat	1540 mg/kg (Source: NLM_CIP)
LD50 dermal rat	> 2375 mg/kg (Source: ECHA)
LC50 inhalation rat	36 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)
Decamethylcyclopentasiloxane (541-02-6)	
LD50 oral rat	> 5000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rabbit	> 2000 mg/kg body weight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 inhalation rat	8.67 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: EPA OTS 798.1150 (Acute inhalation toxicity), 95% CL: 7,3 - 10,32

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2-Butoxyethanol (111-76-2)	
LD50 oral rat	470 mg/kg (Source: NLM_CIP)
LC50 inhalation rat	486 ppm/4h
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

2-Butoxyethanol (111-76-2)	
IARC group	3 - Not classifiable
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
STOT-single exposure	: Not classified

2-Butoxyethanol (111-76-2)	
STOT-single exposure	May cause drowsiness or dizziness. May cause respiratory irritation.
STOT-repeated exposure	: Not classified

Decamethylcyclotetrasiloxane (541-02-6)	
NOAEL (oral,rat,90 days)	≥ 1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (dermal,rat/rabbit,90 days)	≥ 1600 mg/kg body weight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)

Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available

Octamethylcyclotetrasiloxane (556-67-2)	
Viscosity, kinematic	1.6 mm <sup>2</sup> /s Temp.: '20°C' Parameter: 'kinematic viscosity (in mm <sup>2</sup> /s)'

Decamethylcyclotetrasiloxane (541-02-6)	
Viscosity, kinematic	3.7 mm <sup>2</sup> /s Temp.: 'other:' Parameter: 'kinematic viscosity (in mm <sup>2</sup> /s)'

Symptoms/effects after inhalation	: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	: May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/effects after ingestion	: Harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Chronic symptoms	: Suspected of damaging fertility or the unborn child.
Other information	: Likely routes of exposure: ingestion, inhalation, skin and eye.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: May cause long-term adverse effects in the aquatic environment.
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Octamethylcyclotetrasiloxane (556-67-2)	
LC50 - Fish [1]	> 22 µg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	> 15 µg/l Test organisms (species): Daphnia magna
LC50 - Fish [2]	> 1000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus Source: IUCLID)

Decamethylcyclotetrasiloxane (541-02-6)	
LC50 - Fish [1]	> 16 µg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)

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Decamethylcyclopentasiloxane (541-02-6)	
EC50 - Crustacea [1]	> 2.9 µg/l Test organisms (species): Daphnia magna
2-Butoxyethanol (111-76-2)	
LC50 - Fish [1]	1490 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static] Source: EPA)
EC50 - Crustacea [1]	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 - Fish [2]	2950 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus Source: IUCLID)

### 12.2. Persistence and degradability

Graphene Coating	
Persistence and degradability	Not established.
Octamethylcyclotetrasiloxane (556-67-2)	
Persistence and degradability	Rapidly degradable
Decamethylcyclopentasiloxane (541-02-6)	
Persistence and degradability	Rapidly degradable
2-Butoxyethanol (111-76-2)	
Persistence and degradability	Rapidly degradable

### 12.3. Bioaccumulative potential

Graphene Coating	
Bioaccumulative potential	Not established.
Octamethylcyclotetrasiloxane (556-67-2)	
BCF - Fish [1]	(12400 dimensionless)
Partition coefficient n-octanol/water	6.488 (at 25.1 °C)
Decamethylcyclopentasiloxane (541-02-6)	
Partition coefficient n-octanol/water	8.023 (at 25.3 °C)
2-Butoxyethanol (111-76-2)	
Partition coefficient n-octanol/water	0.81 (at 25 °C (at pH 7))

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Other information : No other effects known.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. The generation of waste should be avoided or minimized wherever possible.

Additional information : Handle empty containers with care because residual vapors are flammable.

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### SECTION 14: Transport information

In accordance with DOT

#### 14.1. UN number

UN-No.(DOT) : UN1139

#### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : Coating solution (Contains : Octamethylcyclotetrasiloxane)

#### 14.3. Transport hazard class(es)

##### DOT

Transport hazard class(es) (DOT) : 3

Hazard labels (DOT) : 3



#### 14.4. Packing group

Packing group (DOT) : III

#### 14.5. Environmental hazards

Other information : No supplementary information available.

#### 14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

##### DOT

UN-No.(DOT) : UN1139

DOT Special Provisions (49 CFR 172.102) : B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.

IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

T2 - 1.5 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling =  $97 / 1 + a (tr - tf)$  Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

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### SECTION 15: Regulatory information


#### 15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

#### 15.2. International regulations

No additional information available

#### 15.3. US State regulations

 **WARNING:** This product can expose you to Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### SECTION 16: Other information

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

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Other information : None.  
Prepared by : Nexreg Compliance Inc.  
[www.Nexreg.com](http://www.Nexreg.com)



#### Full text of hazard classes and H-statements

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Flam. Liq. 3	Flammable liquids Category 3
Repr. 2	Reproductive toxicity Category 2

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