

Safety Data Sheet

Date revised: 06/06/2018
This form is subject to changes

1. IDENTIFICATION OF SUBSTANCE:

Product Name: HIGH-TEMPERATURE FLEXIBLE SILVER/GRAPHENE CONDUCTIVE EPOXY,
G6E-HFSG Part A

Product Number(s): G6E-HFSG

Manufacturer/Supplier:

Graphene Supermarket

Graphene Laboratories, Inc.

info@graphenelab.com

760 Koehler Ave.,

Phone: (516) 382-8649

Ronkonkoma, NY11779

Fax: (781) 287-1248

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Ratings:

Eye corrosive

Category 2A

Skin Corrosion/Irritation

Category 2

Skin Sensitization

Category 1

Specific Target Organ Toxicity (Single Exposure)

Category 3

Pictogram



Signal word Warning

Hazard statement(s)

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.



Precautionary statement(s)

P101 If medical advice is needed, have product container or label at hand

P102 Keep out of reach of children

P103 Read label before use

P201 Obtain special instructions before use

P202 Do not handle until all safety precautions have been read and understood

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

P303 + P361 + P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with soap and water/shower.

P304 + P340 + P312

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/ container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1

Ingredient Name	% by Weight	CAS Number
Modified epoxy resins	1-5	propriety
Fatty Acids	20-30	propriety
Silver Flakes	60 - 80	7440-22-4
Graphene Flakes	0.01 - 1	7782-42-5

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

4. FIRST AID MEASURES

- After inhalation

Supply fresh air. Seek medical advice if irritation persists.

- After skin contact

Immediately wash with warm water and mild soap and rinse thoroughly. Mechanical irritation of skin is possible.

- After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

- After ingestion

Get immediate medical attention. Rinse mouth with water but do not swallow the water. Do not induce vomiting unless directed by medical personnel.

by ingestion.

- Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

None known

5.2 Specific hazards arising from the chemical

In a fire or if heated, a pressure increase will occur, and the container may burst. Thermal decomposition may liberate carbon oxides and other toxic vapors

5.3 Advice for firefighters

Wear appropriate protective equipment and self-contained breathing apparatus, gloves, safety goggles

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains, sewers. Avoid release to the environment.

6.3 Methods and materials for containment and cleaning up

Absorb in vermiculite, dry sand or earth and place into container. Flush with plenty of soap water to clean spillage area. Do not contaminate water sources.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid spilling, skin and eye contact. Keep away from the heat and open flame. Do not eat, drink or smoke when using the product.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters



Appropriate engineering controls: Use process enclosures and/or exhaust ventilation to keep airborne dust concentrations below the applicable occupational exposure limit.

8.2 Exposure controls

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed. Keep away from food and beverages.

Avoid contact with the eyes. 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).

Wear impervious clothing to minimize skin contact. Use of a barrier cream may help to prevent skin drying. Wash hands and other exposed skin with mild soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- Form: Paste
- Color: Silver
- Odor: Light Odor
- Change in condition: No data available
- Melting point/Melting range: No data available
- Boiling point/Boiling range: No data available
- Sublimation temperature / start: No data available
- Flash point: No data available
- Ignition temperature: No data available
- Decomposition temperature: No data available
- Danger of explosion: Product does not present an explosion hazard.
- Lower Explosion limits: No data available
- Viscosity: No data available
- Vapor pressure: No data available
- Density: No data available
- Solubility in / Miscibility with Water: negligible, insoluble

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Strong oxidizer

10.5 Incompatible materials

Strong oxidizing agents, Strong acids, Strong alkalis

10.6 Hazardous decomposition products

Under normal conditions of use, hazardous decomposition products should not be produced. Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Ingredient name	Results	Species	Dose	Exposure
Silver Flakes	TDL _o Oral	Rat	330 mg/kg	
Fatty Acids	LD 50 Oral	Rat	2020 mg/kg	
Modified Epoxy Resin	LD 50 Oral LD50 Dermal Skin Erythema/E Eyes 405 Eyes – redness of the conjunctivae Skin severe/ moderate irritant	Rat Rat Rabbit Rabbit Rabbit Rabbit	11,400 mg/kg 2,000 mg/kg 1.5 – 2 (score) 0 0.7	24 hours
Graphene Flakes	LD 50 Oral LC 50 Inhalation	Rat Rat	2,000 mg/kg 2,000 mg/kg	4 hours

• Additional toxicological information:

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in aqueous environment.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

Product has poor water solubility.



12.5 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company

Contaminated packaging

Packaging should be completely emptied of contents and disposed of in a manner specified by the recycler/regional disposal contractor.

14. TRANSPORT INFORMATION

• Product related hazard information:

• National regulations

Clean Air Act: None of the ingredients is listed.

Clean Water Act: None of the ingredients is listed.

• Information about limitation of use:

For use only by technically qualified individuals.

15. REGULATORY INFORMATION

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Components

Acute Health Hazard, Chronic Health Hazard

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Modified Resin

HMIS Rating

Health hazard: 2

Flammability: 1

Physical Hazard 0



Silver Flakes:
HMIS Rating
Health hazard: 1
Flammability: 0
Physical Hazard 0

Distillates (petroleum):
HMIS Rating
No data available

Graphene Flakes:
Health hazard: 2
Flammability: 0
Physical Hazard: 0

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

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1. IDENTIFICATION OF SUBSTANCE:

Product Name: HIGH-TEMPERATURE FLEXIBLE SILVER/GRAPHENE CONDUCTIVE EPOXY,
G6E-HFSG Part B

Product Number(s): G6E-HFSG

Manufacturer/Supplier:

Graphene Supermarket

Graphene Laboratories, Inc.

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Phone: (516) 382-8649

Ronkonkoma, NY11779

Fax: (781) 287-1248

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Ratings:

Acute toxicity (Oral)

Category 4

Acute toxicity (Dermal)

Category 4

Eye Damage

Category 1

Eye Corrosive

Category 2A

Skin Corrosion/Irritation

Category 2

Pictogram



Signal word Warning

Hazard statement(s)

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled

Precautionary statement(s)

P101 If medical advice is needed, have product container or label at hand

P102 Keep out of reach of children

P103 Read label before use

P201 Obtain special instructions before use

P202 Do not handle until all safety precautions have been read and understood

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

P303 + P361 + P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with soap and water/shower.

P304 + P340 + P312

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/ container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1

Ingredient Name	% by Weight	CAS Number
Acid Anhydride Complex	10-30	25134-21-8
Glycerol	1-5	56-81-5
Anhydride	1-5	552-30-7
Imidazole	<0.1	228-32-4
Silver Flakes	60 - 80	7440-22-4

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

4. FIRST AID MEASURES

- After inhalation

Supply fresh air. Seek medical advice if irritation persists.

- After skin contact

Immediately wash with water and mild soap and rinse thoroughly.

Mechanical irritation of skin is possible.

- After eye contact



Rinse opened eye for several minutes under running water. Then consult a doctor.

- After ingestion

Get immediate medical attention. Rinse mouth with water but do not swallow the water. Do not induce vomiting unless directed by medical personnel.

- Indication of any immediate medical attention and special treatment needed

No data available

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use high-volume water spray

Unsuitable extinguishing media

None known

5.2 Specific hazards arising from the chemical

No data available

5.3 Advice for firefighters

Wear appropriate protective equipment and self-contained breathing apparatus, gloves, safety goggles. Collect contaminated fire extinguishing water separately.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing. Ensure adequate ventilation.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains, sewers. Avoid release to the environment.

6.3 Methods and materials for containment and cleaning up

Neutralize with acid. Absorb in vermiculite, dry sand or earth and place into container. Flush with plenty of soap water to clean spillage area.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid spilling, skin and eye contact. Keep away from the heat and open flame. Do not eat, drink or smoke when using the product. Do not breathe vapor/dust

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

7.3 Keep away from strong acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Appropriate engineering controls: Use process enclosures and/or exhaust ventilation .

8.2 Exposure controls

General protective and hygienic measures.

The usual precautionary measures for handling chemicals should be followed. Keep away from food and beverages.

Avoid contact with the eyes. 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).

Wear impervious clothing to minimize skin contact. Use of a barrier cream may help to prevent skin drying. Wash hands and other exposed skin with mild soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- Form: Paste
- Color: Silver
- Odor: Low odor
- Change in condition: No data available
- Melting point/Melting range: No data available
- Boiling point/Boiling range: No data available
- Sublimation temperature / start: No data available
- Flash point: No data available
- Ignition temperature: No data available
- Decomposition temperature: No data available
- Danger of explosion: Product does not present an explosion hazard.
- Lower Explosion limits: No data available
- pH: No data available
- Vapor pressure: No data available
- Density: No data available
- Solubility in / Miscibility with Water: non-soluble

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Strong oxidizer

10.5 Incompatible materials

Strong oxidizing agents, Strong acids, Strong alkalis

10.6 Hazardous decomposition products

Under normal conditions of use, hazardous decomposition products should not be produced. Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Ingredient name	Results	Species	Dose
Acid Anhydride	LD 50 Oral LD50 Dermal Eyes 405 LC10 Inhalation Skin severe/moderate irritant	Rat Rat Rabbit Rat Rabbit	958 mg/kg 4290 mg/kg Strong irritant 750 mg/kg mild
Anhydride	LD 50 Oral	Rat	5600 mg/kg
Imidazole	LD50 Oral	Rat	970 mg/kg
Silver Flakes	TDL _o Oral	Rat	330 mg/kg

Additional toxicological information:

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in aqueous environment.

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 12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS



13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company

Contaminated packaging

Packaging should be completely emptied of contents and disposed of in a manner specified by the recycler/regional disposal contractor.

14. TRANSPORT INFORMATION

- Product related hazard information:

- National regulations

Clean Air Act: None of the ingredients is listed.

Clean Water Act: None of the ingredients is listed.

- Information about limitation of use:

For use only by technically qualified individuals.

15. REGULATORY INFORMATION

Pennsylvania Right to Know Components

Glycerol 56-81-5

Anhydride 552-30-7

Acid Anhydride Complex 25134-21-8

Imidazole 288-32-4

Massachusetts Right to Know Components

Glycerol 56-81-5

Anhydride 552-30-7

New Jersey Right to Know Components

Glycerol 56-81-5

Anhydride 552-30-7

Acid Anhydride Complex 25134-21-8

Imidazole 288-32-4

Road Island Right to Know Components

Glycerol 56-81-5

Anhydride 552-30-7

Acid Anhydride Complex 25134-21-8

Imidazole 288-32-4

Minnesota Right To Know Components

None of the ingredients are listed

- Florida Right To Know Components

None of the ingredients are listed

- Carcinogenic categories

- EPA (Environmental Protection Agency)

None of the ingredients are listed

- TLV (Threshold Limit Value established by ACGIH)

None of the ingredients are listed

- NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acid Anhydride Complex

HMIS Rating

Health hazard: 2

Flammability: 0

Physical Hazard 0

Anhydride

HMIS Rating

Health hazard: 2

Flammability: 0

Physical Hazard 0

Silver Flakes:

HMIS Rating

Health hazard: 1

Flammability: 0

Physical Hazard 0

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.