

## (Material) Safety Data Sheet

### Section 1 - Product and Company Identification

<b>Material Name</b>	▪ <b>Carbon Raschig Rings</b>
<b>Product Description</b>	▪ Including but not limited to: Rings, Tubes, Pellets
<b>Product Use</b>	▪ Heat Transfer, Mass Transfer.
<b>Synonyms</b>	▪ Carbon Graphite material, GIS Carbon, Graphite felt
<b>Manufacturer</b>	▪ Saint-Gobain NorPro 3840 Fishcreek Road Stow, OH 4424 United States www.NorPro.Saint-Gobain.com
<b>Telephone</b>	
<b>General</b>	▪ 330-677-3598
<u><b>Emergency</b></u>	▪ 800-424-9300 - CHEMTREC
<u><b>Emergency</b></u>	▪ 703-527-3887 - CHEMTREC - International
<b>Preparation Date</b>	▪ 02/26/2013
<b>Last Revision Date</b>	▪ 02/29/2016

#### Key to abbreviations

‡ = HMIS is a registered trademark of the American Coatings Association

### Section 2 - Hazards Identification

#### 2.1 Classification of the substance or mixture

##### · Classification according to Regulation (EC) No 1272/2008

The product is not classified as hazardous according to OSHA GHS regulations within the United States.

The product is not classified as hazardous according to the CLP regulation.

· **Additional information:** Adverse health effects are not reasonably expected from normal use of product.

#### · 2.2 Label elements

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

This product does not have a classification according to the CLP regulation.

The product is not classified as hazardous according to OSHA GHS regulations within the United States.

· **Hazard pictograms** Not Regulated

· **Signal word** Not Regulated

· **Hazard-determining components of labelling:** None.

· **Hazard statements** Not Regulated

· **Precautionary statements** Not Regulated.

· **Additional information:** Safety data sheet available on request.

· **2.3 Other hazards** There are no other hazards not otherwise classified that have been identified.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

## Section 3 - Composition/Information on Ingredients

### Hazardous Components

Chemical Name	CAS	%(wt)	UN;EINECS	LD50/LC50	EU R & S Phrases	Other
Graphite	7782-42-5	99% TO 100%	231-955-3	NDA	NDA	NDA

Under United States Regulations (29 CFR 1910.1200(c) - Hazard Communication Standard), the product(s) listed above are exempt as article(s) under stated normal conditions of use. Under Canadian regulations (Workplace Hazardous Materials Information System (WHMIS) - Hazardous Products Act (HPA), Section 11(1)), these product(s) are exempt and considered manufactured article(s) under stated normal conditions of use. Under United Nations Globally Harmonized System for the Classification and Labeling of Hazardous Chemicals (GHS) this product is exempt from regulation as a manufactured article.

See Section 11 for Toxicological Information.

## Section 4 - First Aid Measures

- |                   |  |
|-------------------|--|
| <b>Inhalation</b> | <ul style="list-style-type: none"><li>First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.</li></ul> |
| <b>Skin</b>       | <ul style="list-style-type: none"><li>First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention.</li></ul>   |
| <b>Eye</b>        | <ul style="list-style-type: none"><li>First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.</li></ul>   |
| <b>Ingestion</b>  | <ul style="list-style-type: none"><li>First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, get medical attention.</li></ul>  |

See Section 2 for Potential Health Effects.

## Section 5 - Fire Fighting Measures

- |   |  |
|---|--|
| <b>Extinguishing Media</b>                | <ul style="list-style-type: none"><li>Material is not readily combustible.</li></ul>   |
| <b>Unsuitable Extinguishing Media</b>     | <ul style="list-style-type: none"><li>Not applicable.</li></ul>  |
| <b>Firefighting Procedures</b>            | <ul style="list-style-type: none"><li>Material is generally non-combustible and is not expected to pose a fire or explosion hazard.<br/>Wear appropriate protective clothing.</li></ul>              |
| <b>Unusual Fire and Explosion Hazards</b> | <ul style="list-style-type: none"><li>Material is generally non-combustible and is not expected to pose a fire or explosion hazard.</li></ul>  |
| <b>Hazardous Combustion Products</b>      | <ul style="list-style-type: none"><li>Carbon monoxide and carbon dioxide.</li></ul>  |
| <b>Protection of Firefighters</b>         | <ul style="list-style-type: none"><li>Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.</li></ul> |

## Section 6 - Accidental Release Measures

- |                                  |   |
|----------------------------------|---|
| <b>Personal Precautions</b>      | <ul style="list-style-type: none"><li>No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Do not breathe dust. Ventilate enclosed areas</li></ul> |
| <b>Emergency Procedures</b>      | <ul style="list-style-type: none"><li>No emergency procedures are expected to be necessary if material is used under ordinary conditions and as recommended. Use normal clean up procedures</li></ul>           |
| <b>Environmental Precautions</b> | <ul style="list-style-type: none"><li>Prevent entry into waterways, sewers, basements or confined areas</li></ul>   |

**Containment/Clean-up Measures**

- Avoid generating dust. Sweep, shovel or vacuum up spilled material and place in appropriate container. If dust clean up is necessary be sure to use vacuum cleaner equipped with HEPA filter.

**Other Information**

Graphite is electrically conductive. Dust accumulation may cause electrical short circuits or other malfunctions.

## Section 7 - Handling and Storage

**Handling**

- Avoid rough handling. Use only with adequate ventilation. Avoid dust inhalation and contact with skin and eyes. Wash thoroughly after handling. Use good safety and industrial hygiene practices. Spilled material may cause surfaces to become slippery.

**Storage**

- Store in a cool, dry place.

**Special Packaging Materials**

- No data available.

**Incompatible Materials or Ignition Sources**

- None known.

## Section 8 - Exposure Controls/Personal Protection

**Personal Protective Equipment****Pictograms****Respiratory**

- In case of insufficient ventilation, wear suitable respiratory equipment.

**Eye/Face**

- Wear safety glasses.

**Hands**

- Wear appropriate gloves.

**Skin/Body**

- Use of protective coveralls and long sleeves is recommended to prevent possible abrasion to skin.

**General Industrial Hygiene Considerations**

- Use good industrial hygiene practices in handling this material. Availability of eye wash fountains and emergency showers are recommended.

**Engineering**

- Good general ventilation and/or local exhaust ventilation should be used.

**Measures/Controls**

Ventilation rates should be matched to conditions in order to ensure that concentrations of airborne contaminants are below applicable threshold limit values.

Exposure Limits/Guidelines						
	Result	ACGIH	NIOSH	OSHA	China	Japan
Graphite (7782-42-5)	TWAs	2 mg/m <sup>3</sup> TWA (respirable fraction)	2.5 mg/m <sup>3</sup> TWA (respirable fraction)	Not established	4 mg/m <sup>3</sup> TWA (total dust)	0.5 mg/m <sup>3</sup> OEL (respirable dust)
	STELs	Not established	Not established	Not established	8 mg/m <sup>3</sup> STEL (total dust)	Not established

**Key to abbreviations**

STEV = Short Term Exposure Value

STEL = Short Term Exposure Limits are based on 15-minute exposures

ACGIH = American Conference of Governmental Industrial Hygiene

TLV = Threshold Limit Value determined by the American Conference of Governmental Industrial Hygienists (ACGIH)

NIOSH = National Institute of Occupational Safety and Health

TWAEV = Time-Weighted Average Exposure Value

OEL = Occupational Exposure Limit

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

## Section 9 - Physical and Chemical Properties

- Physical Form**
- Solid
- Appearance/Description**
- Black to dark grey rings, tubes,

<b>Color:</b> Black to grey.		<b>Odor:</b> NDA	
<b>Taste:</b> NDA		<b>Odor Threshold:</b> NDA	
<b>Boiling Point:</b>	4827C (8720F)	<b>Vapor Pressure:</b>	NDA
<b>Melting Point:</b>	3700 C(6692 F)	<b>Vapor Density:</b>	NDA
<b>Specific Gravity/Relative Density:</b>	2 to 3 Water=1	<b>Evaporation Rate:</b>	NDA
<b>Density:</b>	2.25 g/cm <sup>3</sup>	<b>VOC (Wt.):</b>	NDA
<b>Bulk Density:</b>	NDA	<b>VOC (Vol.):</b>	NDA
<b>pH:</b>	NDA	<b>Volatiles (Wt.):</b>	NDA
<b>Water Solubility:</b>	NDA	<b>Volatiles (Vol.):</b>	NDA
<b>Solvent Solubility:</b>	NDA	<b>Flash Point:</b>	NDA
<b>Viscosity:</b>	NDA	<b>Flash Point Test Type:</b>	NDA
<b>Half-Life:</b>	NDA	<b>UEL:</b>	NDA
<b>Octanol/Water Partition coefficient:</b>	NDA	<b>LEL:</b>	NDA
<b>Coefficient of water/oil distribution:</b>	NDA	<b>Autoignition:</b>	NDA
<b>Bioaccumulation Factor:</b>	NDA	<b>Bioconcentration Factor:</b>	NDA
<b>Biochemical Oxygen Demand BOD/BOD5:</b>	NDA	<b>Chemical Oxygen Demand:</b>	NDA
<b>Persistence:</b>	NDA	<b>Degradation:</b>	NDA

## Section 10 - Stability and Reactivity

- Stability**
- Stable under normal temperatures and pressures.
- Hazardous Polymerization**
- Hazardous polymerization will not occur.
- Conditions to Avoid**
- Avoid creating dusts.
- Incompatible Materials**
- Strong oxidizers.
- Hazardous Decomposition Products**
- Carbon Monoxide, carbon dioxide

## Section 11 - Toxicological Information

No toxicological information is available for the material as a whole. Under normal conditions of use, no health effects are expected. Dust may produce mechanical irritation to eyes and skin. Inhalation of dust may cause respiratory irritation.

## Section 12 - Ecological Information

- Ecological Fate**
- No data available
- Persistence/Degradability**
- No data available
- Bioaccumulation Potential**
- No data available
- Mobility in Soil**
- No data available

## Section 13 - Disposal Considerations

- Product**
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## Section 14 - Transportation Information

**DOT - United States - Department of Transportation**  
Shipping Name: Not Regulated

**TDG - Canada - Transport of Dangerous Goods**  
Shipping Name: Not Regulated

**IMO/IMDG - International Maritime Transport**  
Shipping Name: Not Regulated

**IATA - International Air Transport Association**  
Shipping Name: Not Regulated

## Section 15 - Regulatory Information

**SARA Hazard Classifications**      • None

### State Right To Know

Component	CAS	MA	NJ	PA
Graphite	7782-42-5	Yes	Yes	Yes

### Inventory

Component	CAS	Canada DSL	Canada NDSL	China	Japan ENCS	TSCA
Graphite	7782-42-5	Yes	No	Yes	No	Yes

### Canada

#### Labor

##### Canada - WHMIS - Classifications of Substances

- Graphite      7782-42-5      99% TO 100%      ClassD-2A Material causing other toxic effects

##### Canada - WHMIS - Ingredient Disclosure List

- Graphite      7782-42-5      99% TO 100%      Not Listed

#### Environment

##### Canada - CEPA - Priority Substances List

- Graphite      7782-42-5      99% TO 100%      Not Listed

### Canada British Columbia

Environment

**Canada - British Columbia - Ozone Depleting Substances**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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Canada Manitoba

Environment

**Canada - Manitoba - Ozone Depleting Substances and Other Halocarbons - Class 1**

Graphite	7782-42-5	99% TO 100%	Not Listed
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**Canada - Manitoba - Ozone Depleting Substances and Other Halocarbons - Class 2**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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Canada Nova Scotia

Environment

**Canada - Nova Scotia - Ozone Layer Protection Regulations**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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Canada Ontario

Environment

**Canada - Ontario - Airborne Contaminant Reporting - Table 2A**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Canada - Ontario - Airborne Contaminant Reporting - Table 2B**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Canada - Ontario - Ozone Depleting Substances - Solvents - Class 1**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Canada - Ontario - Ozone Depleting Substances - Solvents - Class 2**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Canada - Ontario - Ozone Depleting Substances - Solvents - Class 3**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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Canada Yukon

Environment

**Canada - Yukon - Ozone Depleting Substances and Other Halocarbons**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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China

Other

**China - Annex I & II - Controlled Chemicals Lists**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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## Europe

## Other

**EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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## Japan

## Labor

**Japan - ISHL Dangerous Substances**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Japan - ISHL Designated Carcinogens**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Japan - ISHL Harmful Substances Prohibited for Manufacture**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Japan - ISHL Harmful Substances Requiring Workers to Subject to Medical Exams**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Japan - ISHL Harmful Substances Subject to Obtaining Permission for Manufacturing**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Japan - ISHL Harmful Substances Whose Names Are to be Indicated on the Label**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Japan - ISHL Prevention of Lead Poisoning**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Japan - ISHL Mutagens - Existing Chemicals**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Japan - ISHL Mutagens - New Chemicals**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**Japan - ISHL Notifiable Substances**

▪ Graphite	7782-42-5	99% TO 100%	1 % weight
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**Japan - ISHL Prevention of Organic Solvent Poisoning**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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## Environment

**Japan - Air Pollution Control Law - Emission Standards for Air Pollutants**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>Japan - Pollutant Release Transfer Register (PRTR) - Class 1 Substances</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>Japan - Pollutant Release Transfer Register (PRTR) - Class 2 Substances</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>Inventory - Japan - Industrial Safety and Health Law Substances (ISHL)</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed

## United States

<b>Labor</b>			
<b>U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>U.S. - OSHA - Specifically Regulated Chemicals</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed

<b>Environment</b>			
<b>U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>U.S. - CERCLA/SARA - Section 313 - Emission Reporting</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>U.S. - CWA (Clean Water Act) - Hazardous Substances</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed
<b>U.S. - CWA (Clean Water Act) - Priority Pollutants</b>			
▪ Graphite	7782-42-5	99% TO 100%	Not Listed



**U.S. - CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - CWA (Clean Water Act) - Toxic Pollutants**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - RCRA (Resource Conservation & Recovery Act) - Constituents for Detection Monitoring**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - RCRA (Resource Conservation & Recovery Act) - D Series Wastes - Max Conc of Contaminants for the Tox Characteristic**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - RCRA (Resource Conservation & Recovery Act) - F Series Wastes - Wastes from Nonspecific Sources**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - RCRA (Resource Conservation & Recovery Act) - K Series Wastes - Wastes from Specified Sources**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - RCRA (Resource Conservation & Recovery Act) - P Series Wastes - Acutely Toxic Wastes**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - RCRA (Resource Conservation & Recovery Act) - U Series Wastes - Acutely Toxic Wastes & Other Hazardous Characteristics**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - RCRA (Resource Conservation & Recovery Act) - Waste Minimization Priority Chemicals**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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## United States - California

## Environment

**U.S. - California - Proposition 65 - Carcinogens List**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - California - Proposition 65 - Developmental Toxicity**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - California - Proposition 65 - Reproductive Toxicity - Female**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - California - Proposition 65 - Reproductive Toxicity - Male**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**United States - Pennsylvania****Labor****U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances**

▪ Graphite	7782-42-5	99% TO 100%	Not Listed
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**United States - Rhode Island****Labor****U.S. - Rhode Island - Hazardous Substance List**

▪ Graphite	7782-42-5	99% TO 100%	Toxic
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**Section 16 - Other Information****Last Revision Date**

- 02/29/2016

**Preparation Date**

- 02/26/2013

**Disclaimer/Statement of Liability**

- Reasonable care has been taken in the preparation of this information, but the supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Material Safety Data Sheet before handling product.

**Key to abbreviations**

NDA = No Data Available