

1. Identification

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| Product identifier | GRAFOIL® Clad Alloy C-276 Laminates & Gaskets |
| Other means of identification | |
| SDS number | 0057 |
| Recommended use | Gasket material. |
| Recommended restrictions | Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations. |
| Manufacturer/Importer/Supplier/Distributor information | |
| Manufacturer/Supplier | NeoGraf Solutions, LLC 11709 Madison Ave. Lakewood, OH 44107 +1 216-529-3777 |
| Contact person | Product Responsibility Manager +1 216-529-3724 |
| E-mail | info@neograf.com |
| Emergency telephone number | For Chemical Emergency ONLY, call 3E at: +1-866-519-4752, +1-760-476-3962 Access Code: 333366 |

2. Hazard(s) identification

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| Physical hazards | Not classified. |
| Health hazards | Not classified. |
| OSHA defined hazards | Not classified. |
| Label elements | |
| Hazard symbol | None. |
| Signal word | None. |
| Hazard statement | The mixture does not meet the criteria for classification. |
| Precautionary statement | |
| Prevention | Observe good industrial hygiene practices. |
| Response | Wash hands after handling. |
| Storage | Store away from incompatible materials. |
| Disposal | Dispose of waste and residues in accordance with local authority requirements. |
| Hazard(s) not otherwise classified (HNOC) | None known. |
| Supplemental information | None. |

3. Composition/information on ingredients

Mixtures

| Chemical name | CAS number | % |
|-----------------------------|------------|---------|
| Graphite | 7782-42-5 | 46 - 97 |
| Low Carbon Steel | 7439-89-6 | 3 - 54 |
| Crystalline silica (quartz) | 14808-60-7 | < 0.3 |

Composition comments

Product is a laminate of natural graphite foil and Alloy C-276. Lamination is accomplished either by tang in the metal or use of adhesive. None of components of adhesive is present in concentrations that would require it to be declared.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

Use water spray to cool unopened containers.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

| Components | Type | Value |
|--|------|------------------------|
| Crystalline silica (quartz) (CAS 14808-60-7) | TWA | 0.05 mg/m ³ |

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components | Type | Value | Form |
|--------------------------|------|----------------------|----------------------|
| Graphite (CAS 7782-42-5) | PEL | 5 mg/m ³ | Respirable fraction. |
| | | 15 mg/m ³ | Total dust. |

US. OSHA Table Z-3 (29 CFR 1910.1000)

| Components | Type | Value | Form |
|---|------|-----------------------|-------------|
| Crystalline silica (quartz) (CAS 14808-60-7) | TWA | 0.1 mg/m ³ | Respirable. |
| Graphite (CAS 7782-42-5) | TWA | 2.4 mppcf 15 mppcf | Respirable. |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|---|------|-------------------------|----------------------|
| Crystalline silica (quartz) (CAS 14808-60-7) | TWA | 0.025 mg/m ³ | Respirable fraction. |
| Graphite (CAS 7782-42-5) | TWA | 2 mg/m ³ | Respirable fraction. |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value | Form |
|---|------|------------------------|------------------|
| Crystalline silica (quartz) (CAS 14808-60-7) | TWA | 0.05 mg/m ³ | Respirable dust. |
| Graphite (CAS 7782-42-5) | TWA | 2.5 mg/m ³ | Respirable. |

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| Biological limit values | No biological exposure limits noted for the ingredient(s). |
| Exposure guidelines | Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. |
| Appropriate engineering controls | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. |
| Individual protection measures, such as personal protective equipment | |
| Eye/face protection | Wear safety glasses with side shields (or goggles). |
| Skin protection | |
| Hand protection | Wear appropriate chemical resistant gloves. |
| Skin protection | |
| Other | Wear suitable protective clothing. |
| Respiratory protection | Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |

9. Physical and chemical properties

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|---|-----------------------|
| Appearance | Laminate sheet. |
| Physical state | Solid. |
| Form | Laminate sheet. |
| Color | Black. |
| Odor | Slight hydrocarbon. |
| pH | Not applicable. |
| Melting point/freezing point | > 5000 °F (> 2760 °C) |
| Initial boiling point and boiling range | Not applicable. |
| Flash point | Not applicable. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not applicable. |

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| Flammability limit - upper (%) | Not applicable. |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | Not applicable. |
| Vapor density | Not applicable. |
| Relative density | 0.7 - 5.1 |
| Relative density temperature | 70 °F (21.11 °C) |
| Solubility(ies) | |
| Solubility (water) | < 0.1 % (Insoluble.) |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not applicable. |
| Decomposition temperature | Not applicable. |
| Viscosity | Not available. |
| Other information | |
| Bulk density | 70 lb/ft ³ (Graphite) |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |

10. Stability and reactivity

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|---|---|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Contact with incompatible materials. |
| Incompatible materials | Chlorine. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

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| Inhalation | Prolonged inhalation may be harmful. |
| Skin contact | No adverse effects due to skin contact are expected. |
| Eye contact | Direct contact with eyes may cause temporary irritation. |
| Ingestion | Expected to be a low ingestion hazard. |

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

| Components | Species | Test Results |
|--|---|---------------|
| Graphite (CAS 7782-42-5) | | |
| Acute | | |
| Oral | | |
| LD50 | Rat | > 10000 mg/kg |
| Skin corrosion/irritation | Prolonged skin contact may cause temporary irritation. | |
| Serious eye damage/eye irritation | Direct contact with eyes may cause temporary irritation. | |
| Respiratory or skin sensitization | | |
| Respiratory sensitization | Not a respiratory sensitizer. | |
| Skin sensitization | This product is not expected to cause skin sensitization. | |

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| Germ cell mutagenicity | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| Carcinogenicity | In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. Risk of cancer cannot be excluded with prolonged exposure. |

IARC Monographs. Overall Evaluation of Carcinogenicity

Crystalline silica (quartz) (CAS 14808-60-7) 1 Carcinogenic to humans.

NTP Report on Carcinogens

Crystalline silica (quartz) (CAS 14808-60-7) Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Crystalline silica (quartz) (CAS 14808-60-7) Cancer

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|---|--|
| Reproductive toxicity | This product is not expected to cause reproductive or developmental effects. |
| Specific target organ toxicity - single exposure | Not classified. |
| Specific target organ toxicity - repeated exposure | Not classified. |
| Aspiration hazard | Not an aspiration hazard. |
| Chronic effects | Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. |

12. Ecological information

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| Ecotoxicity | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |
| Persistence and degradability | No data is available on the degradability of any ingredients in the mixture. |
| Bioaccumulative potential | No data available. |
| Mobility in soil | The product is insoluble in water. |
| Other adverse effects | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

13. Disposal considerations

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| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Waste from residues / unused products | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |

14. Transport information

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|-------------|-----------------------------------|
| DOT | Not regulated as dangerous goods. |
| IATA | Not regulated as dangerous goods. |

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

| | |
|--|---|
| Crystalline silica (quartz) (CAS 14808-60-7) | Cancer lung effects immune system effects kidney effects |
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Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations**US. Massachusetts RTK - Substance List**

Crystalline silica (quartz) (CAS 14808-60-7)
Graphite (CAS 7782-42-5)

US. New Jersey Worker and Community Right-to-Know Act

Crystalline silica (quartz) (CAS 14808-60-7)
Graphite (CAS 7782-42-5)

US. Pennsylvania Worker and Community Right-to-Know Law

Crystalline silica (quartz) (CAS 14808-60-7)
Graphite (CAS 7782-42-5)

US. Rhode Island RTK

Crystalline silica (quartz) (CAS 14808-60-7)
Graphite (CAS 7782-42-5)

California Proposition 65

WARNING: This product can expose you to Crystalline silica (quartz), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Crystalline silica (quartz) (CAS 14808-60-7) Listed: October 1, 1988

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Crystalline silica (quartz) (CAS 14808-60-7)

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|-------------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| Taiwan | Taiwan Chemical Substance Inventory (TCSI) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 02-February-2018

Revision date -

Version # 01

NFPA ratings



Disclaimer

NeoGraf Solutions cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.