



SAFETY DATA SHEET

in accordance with REACH (1907/2006/EC, as amended by 2015/830/EU) 29 CFR 1910.1200 and WHMIS 2015

Revision date: 16 May 2018

Initial date of issue: 17 September 2007

SDS No. 1119-4

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

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1.2. Relevant identified uses of the substance or mixture and uses advised against

General purpose graphite sheet reinforced with stainless steel foil, 870°C (1600°F) non-oxidizing atmosphere and 425°C (800°F) oxidizing atmosphere.

1.3. Details of the supplier of the safety data sheet

Company:

A.W. CHESTERTON COMPANY
860 Salem Street
Groveland, MA 01834-1507, USA
Tel. +1 978-469-6446 Fax: +1 978-469-6785
(Mon. - Fri. 8:30 - 5:00 PM EST)
SDS requests: www.chesterton.com
E-mail (SDS questions): ProductMSDSs@chesterton.com
E-mail: customer.service@chesterton.com

Supplier:

Canada: A.W. Chesterton Company Ltd., 889 Fraser Drive,
Unit 105, Burlington, Ontario L7L 4X8 – Tel. 905-335-5055
EU: Chesterton International GmbH, Am Lenzenfleck 23,
D85737 Ismaning, Germany – Tel. +49-89-996-5460

1.4. Emergency telephone number

24 hours per day, 7 days per week
Call Infotrac: 1-800-535-5053
Outside N. America: +1 352-323-3500 (collect)
NSW Poisons Information Centre (Australia): 13 11 26

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP] / 29 CFR 1910.1200 / WHMIS 2015 / GHS

This product does not meet the criteria for classification in any hazard class according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, 29 CFR 1910.1200, WHMIS 2015 and GHS.

2.1.2. Australian statement of hazardous nature

Not classified as hazardous according to criteria of Safe Work Australia.

2.1.3. Additional information

None

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP] / 29 CFR 1910.1200 / WHMIS 2015 / GHS

Hazard pictograms: None

Signal word: None

Hazard statements: None

Precautionary statements: None

Supplemental information: None

2.3. Other hazards

None expected in industrial use.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.2. Mixtures**

| Hazardous Ingredients ¹ | % Wt. | CAS No./ EC No. | REACH Reg. No. | CLP/GHS Classification |
|------------------------------------|-------|--|-------------------|------------------------|
| Graphite/Carbon | ≥ 97 | 7782-42-5/ 231-955-3 7440-44-0/ 231-153-3 | NA | Not classified* |

*Substance with a workplace exposure limit.

¹ Classified according to: • 29 CFR 1910.1200, 1915, 1916, 1917, Mass. Right-to-Know Law (ch. 40, M.G.L..O. 111F), California Proposition 65
• 1272/2008/EC, GHS, REACH
• WHMIS 2015
• Safe Work Australia

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures**

Inhalation: Remove to fresh air. If not breathing, administer artificial respiration. Contact physician.

Skin contact: Wash skin with soap and water. Contact physician if irritation persists.

Eye contact: Flush eyes for at least 15 minutes with large amounts of water. Contact physician if irritation persists.

Ingestion: Not applicable

Protection of first-aiders: No special precautions.

4.2. Most important symptoms and effects, both acute and delayed

Graphite dust and carbon fibers may cause mechanical irritation of the skin, eyes and nasal passages. Repeated inhalation of nuisance dust in excess of exposure limits over an extended period of time may result in injury to the lungs. Symptoms can include cough, shortness of breath and decrease in pulmonary function.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptoms.

SECTION 5: FIREFIGHTING MEASURES**5.1. Extinguishing media**

Suitable extinguishing media: Carbon dioxide, dry chemical, foam or water spray

Unsuitable extinguishing media: None known

5.2. Special hazards arising from the substance or mixture

None

5.3. Advice for firefighters

Recommend Firefighters wear self-contained breathing apparatus.

Flammability Classification: –

HAZCHEM Emergency Action Code: 2 Z

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal precautions, protective equipment and emergency procedures**

Utilize exposure controls and personal protection as specified in Section 8.

6.2. Environmental Precautions

No special requirements.

6.3. Methods and material for containment and cleaning up

No special steps required. Nontoxic.

6.4. Reference to other sections

Refer to section 13 for disposal advice.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

Accumulations of graphite may cause shorting of electrical circuits. Utilize exposure controls and personal protection as specified in Section 8.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry area.

7.3. Specific end use(s)

No special precautions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****Occupational exposure limit values**

| Ingredients | OSHA PEL ¹ | | ACGIH TLV ² | | UK WEL ³ | | AUSTRALIA ES ⁴ | |
|-------------|-----------------------|-------------------|------------------------|-------------------|---------------------|-------------------|---------------------------|-------------------|
| | ppm | mg/m ³ | ppm | mg/m ³ | ppm | mg/m ³ | ppm | mg/m ³ |
| Graphite | (resp.) | 5 | (resp.) | 2 | (resp.) | 4 | (resp.) | 3 |
| | (total) | 15 | | | (total) | 10 | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ United States Occupational Health & Safety Administration permissible exposure limits

² American Conference of Governmental Industrial Hygienists threshold limit values

³ EH40 Workplace exposure limits, Health & Safety Executive

⁴ Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003]

Derived No Effect Level (DNEL) according to Regulation (EC) No 1907/2006:**Workers**

Not available

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No 1907/2006:

Not available

8.2. Exposure controls**8.2.1. Engineering measures**

No special requirements. If exposure limits are exceeded, provide adequate ventilation.

8.2.2. Individual protection measures

Respiratory protection: Not normally needed. If exposure limit is exceeded, use approved dust respirator (e.g., EN filter type P2).

Protective gloves: Recommended

Eye and face protection: Recommend safety glasses.

Other: None

8.2.3. Environmental exposure controls

No special requirements.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

| | | | |
|---|----------------|--------------------------------------|----------------|
| Physical state | solid | Odour | none |
| Colour | gray | Odour threshold | not applicable |
| Initial boiling point | not applicable | Vapour pressure @ 20°C | not applicable |
| Melting point | not applicable | % Aromatics by weight | not applicable |
| % Volatile (by volume) | not applicable | pH | not applicable |
| Flash point | not applicable | Relative density | not applicable |
| Method | not applicable | Weight per volume | not applicable |
| Viscosity | not applicable | Coefficient (water/oil) | not applicable |
| Autoignition temperature | not determined | Vapour density (air=1) | not applicable |
| Decomposition temperature | not determined | Rate of evaporation (ether=1) | not applicable |
| Upper/lower flammability or explosive limits | not applicable | Solubility in water | insoluble |
| Flammability (solid, gas) | not determined | Oxidising properties | none |
| Explosive properties | not explosive | | |

9.2. Other information

None

SECTION 10: STABILITY AND REACTIVITY**10.1. Reactivity**

Refer to sections 10.3 and 10.5.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

No dangerous reactions known under conditions of normal use.

10.4. Conditions to avoid

None

10.5. Incompatible materials

Fluorine, aqua regia, oleum, fuming Nitric Acid and Hydrochloric Acid and Hydrofluoric Acid when used as a positive electrode.

10.6. Hazardous decomposition products

Carbon Monoxide, Carbon Dioxide and other toxic fumes.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. Information on toxicological effects**

Primary route of exposure under normal use: Inhalation, skin and eye contact. Personnel with pre-existing chronic respiratory impairments may be aggravated by exposure.

Acute toxicity -**Oral:**

Based on available data on components, the classification criteria are not met.

| Substance | Test | Result |
|-----------|-----------|--------------|
| Graphite | LD50, rat | > 2000 mg/kg |

Dermal:

Based on available data on components, the classification criteria are not met.

Inhalation:

Graphite dust and carbon fibers may cause mechanical irritation of the nasal passages.

| Substance | Test | Result |
|-----------|--------------------|--------------------------|
| Graphite | LC50, rat, 4 hours | > 2000 mg/m ³ |

Skin corrosion/irritation:

Graphite dust and carbon fibers may cause mechanical irritation of the skin.

| Substance | Test | Result |
|-----------|-------------------------|----------------|
| Graphite | Skin irritation, rabbit | Not irritating |

Serious eye damage/irritation:

Graphite dust and carbon fibers may cause mechanical irritation of the eyes.

| Substance | Test | Result |
|-----------|------------------------|----------------|
| Graphite | Eye irritation, rabbit | Not irritating |

Respiratory or skin sensitisation: Based on available data on components, the classification criteria are not met.

| Substance | Test | Result |
|-----------|--------------------------------------|-----------------|
| Graphite | Skin sensitization (OECD 429), mouse | Not sensitizing |

Germ cell mutagenicity: Based on available data on components, the classification criteria are not met.

Carcinogenicity: This product contains no carcinogens as listed by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), the Occupational Safety and Health Administration (OSHA) or Regulation (EC) No 1272/2008.

Reproductive toxicity: Based on available data on components, the classification criteria are not met.

STOT – single exposure: Based on available data on components, the classification criteria are not met.

STOT – repeated exposure: Repeated inhalation of nuisance dust in excess of exposure limits over an extended period of time may result in injury to the lungs. Symptoms can include cough, shortness of breath and decrease in pulmonary function. Graphite: based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

Other information: None

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. The information given below is based on a knowledge of the components and the ecotoxicology of similar substances.

12.1. Toxicity

Not expected to be harmful to aquatic organisms. Graphite: 96 h LC50 (fish) > 100 mg/l.

12.2. Persistence and degradability

Graphite/Carbon: inorganic substances, exist in nature.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

Solid. Insoluble in water. In determining environmental mobility, consider the product's physical and chemical properties (see Section 9).

12.5. Results of PBT and vPvB assessment

Not available

12.6. Other adverse effects

None known

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Unused product is not a regulated waste. Not classified as hazardous according to 2008/98/EC. Can be disposed in a secure, properly licensed landfill. Check local, state and national/federal regulations and comply with the most stringent requirement.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

ADR/RID/ADN/IMDG/ICAO: NOT APPLICABLE

TDG: NOT APPLICABLE

US DOT: NOT APPLICABLE

14.2. UN proper shipping name

ADR/RID/ADN/IMDG/ICAO: NON-HAZARDOUS, NON REGULATED

TDG: NON-HAZARDOUS, NON REGULATED

US DOT: NON-HAZARDOUS, NON REGULATED

14.3. Transport hazard class(es)

ADR/RID/ADN/IMDG/ICAO: NOT APPLICABLE

TDG: NOT APPLICABLE

US DOT: NOT APPLICABLE

14.4. Packing group

ADR/RID/ADN/IMDG/ICAO: NOT APPLICABLE

TDG: NOT APPLICABLE

US DOT: NOT APPLICABLE

14.5. Environmental hazards

NOT APPLICABLE

14.6. Special precautions for user

NOT APPLICABLE

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

NOT APPLICABLE

14.8. Other information

NOT APPLICABLE

SECTION 15: REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****15.1.1. EU regulations****Authorisations under Title VII:** Not applicable**Restrictions under Title VIII:** None**Other EU regulations:** None**15.1.2. National regulations****US EPA SARA TITLE III****312 Hazards:**

None

313 Chemicals:

None

Other national regulations:

None

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: OTHER INFORMATION**Abbreviations and acronyms:**

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE: Acute Toxicity Estimate

BCF: Bioconcentration Factor

cATpE: Converted Acute Toxicity point Estimate

CLP: Classification Labelling Packaging Regulation (1272/2008/EC)

ES: Exposure Standard

GHS: Globally Harmonized System

ICAO: International Civil Aviation Organization

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration to 50 % of a test population

LD50: Lethal Dose to 50% of a test population

LOEL: Lowest Observed Effect Level

N/A: Not Applicable

NA: Not Available

NOEC: No Observed Effect Concentration

NOEL: No Observed Effect Level

OECD: Organization for Economic Co-operation and Development

PBT: Persistent, Bioaccumulative and Toxic substance

(Q)SAR: Quantitative Structure-Activity Relationship

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (1907/2006/EC)

REL: Recommended Exposure Limit

RID: Regulations concerning the International Carriage of Dangerous Goods by Rail

SDS: Safety Data Sheet

STEL: Short Term Exposure Limit

STOT RE: Specific Target Organ Toxicity, Repeated Exposure

STOT SE: Specific Target Organ Toxicity, Single Exposure

TDG: Transportation of Dangerous Goods (Canada)

TWA: Time Weighted Average

US DOT: United States Department of Transportation

vPvB: very Persistent and very Bioaccumulative substance

WEL: Workplace Exposure Limit

WHMIS: Workplace Hazardous Materials Information System

Other abbreviations and acronyms can be looked up at www.wikipedia.org.

Key literature references and sources for data: Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST)
 Chemical Classification and Information Database (CCID)
 European Chemicals Agency (ECHA) - Information on Chemicals
 Hazardous Chemical Information System (HCIS)
 National Institute of Technology and Evaluation (NITE)
 Swedish Chemicals Agency (KEMI)
 U.S. National Library of Medicine Toxicology Data Network (TOXNET)

Procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008 [CLP] / GHS:

| Classification | Classification procedure |
|----------------|--------------------------|
| Not applicable | Not applicable |

Relevant H-statements: None

Hazard pictogram names: Not applicable

Changes to the SDS in this revision: Sections 1.3, 1.4, 2.1, 2.2, 3, 4.1, 5.1, 5.3, 8.1, 9.1, 11, 12.1, 12.2, 12.3, 13, 15.1.2, 16.

Date of last revision: 16 May 2018

Further information: None

This information is based solely on data provided by suppliers of the materials used, not on the mixture itself. No warranty is expressed or implied regarding the suitability of the product for the user's particular purpose. The user must make their own determination as to suitability.