

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Name of the substance	Graphite
Trade name of the substance	eGRAF® Flexible Graphite with or without Adhesive Backing, including: HITHERM™ 700 Series, HITHERM™ 1200 Series, SPREADERSHIELD™
Identification number	7782-42-5
Registration number	-
Synonyms	None.
SDS number	0069
Issue date	31-August-2012
Version number	01
Revision date	-
Supersedes date	-

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

Identified uses	Thermal interface.
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Supplier	GrafTech UK Limited c/o Hart Shaw The Hart Shaw Building Europa Link Sheffield Business Park Sheffield S9 1XU UK 44-114-251-8850
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1.4. Emergency telephone number

	For Chemical Emergency ONLY, call CHEMTREC at: +(44)-870-8200418 or +1-703-527-3887
Manufacturer	GrafTech International Holdings Inc 12900 Snow Road Parma, Ohio 44130 1-216-676-2000
Contact person e-mail	Dave Mieskowski +1 216-676-2304 Dave.Mieskowski@graftech.com

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

This substance does not meet the criteria for classification according to Directive 67/548/EEC as amended.

Classification according to Regulation (EC) No 1272/2008 as amended

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary

Physical hazards	Not classified for physical hazards.
Health hazards	Not classified for health hazards.
Environmental hazards	Not classified for hazards to the environment.
Specific hazards	Not available.
Main symptoms	Not relevant, due to the form of the product.

2.2. Label elements**Label according to Regulation (EC) No. 1272/2008 as amended**

Identification number	7782-42-5
Hazard pictograms	None.

Signal word	None.
Hazard statements	The substance does not meet the criteria for classification.
Precautionary statements	
Prevention	Observe good industrial hygiene practices.
Response	Wash skin with soap and water.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Supplemental label information	Not applicable.
2.3. Other hazards	Not assigned.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Graphite	> 95	7782-42-5 231-955-3	-	-	
Classification:	DSD: -				
	CLP: -				
Impurity: Crystalline silica (quartz)**	< 0.8	14808-60-7 238-878-4	-	-	
Classification:	DSD: Xn;R48/20				
	CLP: STOT RE 1;H372				

#: This substance has been assigned Community workplace exposure limit(s).

CLP: Regulation No. 1272/2008.

DSD: Directive 67/548/EEC.

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. The full text for all R- and H-phrases is displayed in section 16.

SECTION 4: First aid measures

General information Not relevant, due to the form of the product.

4.1. Description of first aid measures

Inhalation	No specific first aid measures noted.
Skin contact	No adverse effects due to skin contact. However, rinse with water.
Eye contact	No specific first aid measures noted. However, immediately flush with plenty of water for at least 15 minutes.
Ingestion	No adverse effects due to ingestion are expected.

4.2. Most important symptoms and effects, both acute and delayed Not relevant, due to the form of the product.

4.3. Indication of any immediate medical attention and special treatment needed Not relevant, due to the form of the product.

SECTION 5: Firefighting measures

General fire hazards Bulk material is non-combustible.

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	None.

5.2. Special hazards arising from the substance or mixture Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterised.

5.3. Advice for firefighters

Special protective equipment for firefighters	Use standard firefighting procedures and consider the hazards of other involved materials. Cool material exposed to heat with water spray and remove it if no risk is involved.
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Special fire fighting procedures

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

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel Used as intended, this product is not expected to generate potentially hazardous quantities of dust or fumes. See Section 8 for personal protective equipment.

For emergency responders Use personal protection recommended in Section 8 of the SDS.

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

6.3. Methods and material for containment and cleaning up Collect and dispose of spillage as indicated in section 13.

6.4. Reference to other sections For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Normal handling and use of this product should not generate dust or fumes. The intended use of this product does not include its milling, grinding or saw cutting. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities Store in closed original container in a dry place.

7.3. Specific end use(s) Thermal interface.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits****UK. EH40 Workplace Exposure Limits (WELs)**

Components	Type	Value	Form
Graphite (CAS 7782-42-5)	TWA	4 mg/m3 10 mg/m3	Respirable dust. Inhalable dust.
Impurity: Crystalline silica (quartz)** (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable.

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no-effect level (DNEL)

Components	Type	Route	Value	Form
Graphite (CAS 7782-42-5)	Workers	Inhalation	0.17 mg/m3	Acute exposure local effects
		Inhalation	0.01 mg/m3	Long term exposure local effects

Predicted no effect concentrations (PNECs)

Components	Type	Route	Value	Form
Graphite (CAS 7782-42-5)	Aqua (freshwater)	Not applicable	1 mg/l	
	Aqua (marine water)	Not applicable	0.1 mg/l	
	STP	Not applicable	50 mg/l	

8.2. Exposure controls

Appropriate engineering controls **Personnel samples taken for crystalline silica during cut-fabrication all had results below 0.025 mg/m3 measured as an 8 hour time weighted average. Used as intended, this product is not expected to generate potentially hazardous quantities of dust or fumes. No special requirements under ordinary conditions of use and with adequate ventilation.

Individual protection measures, such as personal protective equipment

General information Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Make sure to provide adequate control by applying the "COSHH Essentials" procedure.

Eye/face protection No specific recommendations.

Skin protection

- Hand protection No protection is ordinarily required under normal conditions of use.

- Other No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Respiratory protection	No protection is ordinarily required under normal conditions of use and with adequate ventilation.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures	Wash hands after contact.
Environmental exposure controls	None.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Graphite foil
Physical state	Solid.
Form	Solid.
Colour	Black.
Odour	Slight hydrocarbon.
Odour threshold	Not available.
pH	Not applicable.
Melting point/freezing point	> 2760 °C (> 5000 °F)
Initial boiling point and boiling range	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	Not available.
Solubility(ies)	Insoluble.
Partition coefficient (n-octanol/water)	No data available.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
Viscosity	Not applicable.
Explosive properties	Not available.
Oxidizing properties	Not available.
9.2. Other information	No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	Stable at normal conditions.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	Will not occur.
10.4. Conditions to avoid	No special precautions.
10.5. Incompatible materials	Strong oxidising agents. Strong reducing agents.
10.6. Hazardous decomposition products	Carbon oxides. Unidentified organic compounds.

SECTION 11: Toxicological information

General information	Used as intended, this product is not expected to generate potentially hazardous quantities of dust or fumes.
Information on likely routes of exposure	
Ingestion	Not relevant, due to the form of the product.
Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	No adverse effects due to eye contact are expected.

Symptoms	Not relevant, due to the form of the product.
11.1. Information on toxicological effects	
Acute toxicity	No adverse effects are expected.
Skin corrosion/irritation	No adverse effects due to skin contact are expected.
Serious eye damage/irritation	No adverse effects due to eye contact are expected.
Respiratory sensitisation	Not available.
Skin sensitisation	Not a skin sensitiser.
Germ cell mutagenicity	No data available.
Carcinogenicity	Crystalline silica has been classified by IARC, NTP and ACGIH as a known human carcinogen and suspected human carcinogen respectively.

IARC Monographs. Overall Evaluation of Carcinogenicity

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

Reproductive toxicity	No data available.
Specific target organ toxicity - single exposure	No data available.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	Not classified.
Mixture versus substance information	Not available.
Other information	Not relevant, due to the form of the product.

SECTION 12: Ecological information

12.1. Toxicity	The product is not expected to be hazardous to the environment.
12.2. Persistence and degradability	Not relevant.
12.3. Bioaccumulative potential	Not relevant.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	No data available.
Mobility in general	Not relevant, due to the form of the product.
12.5. Results of PBT and vPvB assessment	Not relevant, due to the form of the product.
12.6. Other adverse effects	Not relevant.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.
Contaminated packaging	Dispose product packaging in accordance with local authority requirements taking into account characteristics of the packaging material.
EU waste code	10 02 99 The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Dispose of waste and residues in accordance with local authority requirements. Waste must be kept in sealed and labeled containers. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Recover and reclaim or recycle, if practical.

SECTION 14: Transport information

ADR

The product is not covered by international regulation on the transport of dangerous goods.

RID

The product is not covered by international regulation on the transport of dangerous goods.

ADN

The product is not covered by international regulation on the transport of dangerous goods.

IATA

The product is not covered by international regulation on the transport of dangerous goods.

IMDG

The product is not covered by international regulation on the transport of dangerous goods.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 143/2011 Annex XIV Substances Subject to Authorisation

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work

Not regulated.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding

Not regulated.

Other EU regulations

Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances

Not regulated.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Not listed.

Directive 94/33/EC on the protection of young people at work

Not listed.

Other regulations

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 (CLP Regulation) and Directive 67/548/EEC and their amendments respectively.

National regulations

Safety data sheet available for professional user on request.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration.
CLP: Regulation No. 1272/2008.
DSD: Directive 67/548/EEC.

References

Not available.

Information on evaluation method leading to the classification of mixture

The mixture is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

H372 - Causes damage to organs through prolonged or repeated exposure.

Training information

Follow training instructions when handling this material.

Further information

This safety data sheet contains revisions in the following section(s): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.

Disclaimer

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