

	Material Safety Data Sheet according to EU regulation no. 1907/2006	Date: 03.09.2013
	Product name:	Actual revision: 07.05.2013
	Macro crystalline graphite (carbon) – without dust	Next revision: 08.05.2014
		Page: 1 of 10

1. Identification of the substance and of the company

1.1 Details on substance / preparation:

Trade name: Natural graphite
 EC substance name: Naturally occurring substance
 REACH registration number: Not available
 CAS number: 999999-99-4
 EC number: 310-127-6

1.2 Application of the substance / the preparation:

Uses of the substance: material, lubricant, lead, fillers
 Not recommended uses: There are no specific uses identified which are not recommended.

1.3 Manufacturer / supplier:

Manufacturer: AMG Mining AG
 Langheinrichstrasse 1
 D-94051 Hauzenberg
 Phone: +49 (0) 8586 609-0
 Fax: +49 (0) 8586 609-110
 eMail: customerservice@gk-graphite.com
 Internet: <http://www.gk-graphite.com>
 Further information obtainable from: GK Laboratory
 Phone: +49 (0) 8586 609-167
 Fax: +49 (0) 8586 609-114
 eMail: reach@gk-graphite.com

1.4 Emergency call:

Emergency information: Phone: +49 (0) 8586 609-0
 Mon – Th: 8 a.m. – 4 p.m., Fri: 8 a.m. – 1 p.m.

2. Hazards identification

2.1 **Classification acc. to Directive 67/548/EEC (DSD), 1999/45/EC (DPD) and 1272/2008 (CLP):**
 No product dangerous to health and environment.

2.2 **Labeling requirements acc. to Directive 67/548/EEC (DSD), 1999/45/EC (DPD) and 1272/2008 (CLP):**
 Not subject to specific labeling.

2.3 **Other hazards:**
 Slightly irritating on inhalation, skin and eye contact.

2.4 Additional human and environmental hazard information:

2.4.1 **Potential adverse physicochemical effects:**
 Because of the macro crystalline form formation of combustible mixtures is hardly probable.

2.4.2 **Potential adverse effects on humans and possible symptoms:**
 Slightly irritating on skin and mucosa by mechanical effect.

2.4.3 **Potential adverse effects on the environment:** unknown.



**Material Safety Data Sheet
according to EU regulation no. 1907/2006**

Date:
03.09.2013

Product name:

Actual revision:
07.05.2013

**Macro crystalline graphite (carbon) –
without dust**

Next revision:
08.05.2014

Page: 2 of 10

2.4.4 Further potential hazards: unknown.

3. Composition / information on ingredients:

3.1 Chemical characterisation:

Description: Natural graphite

3.2 Ingredients

Chemical name	EC no	CAS no.	REACH no.	content %	EC / GHS classification
Naturally occurring substance (graphite)	310-127-6	999999-99-4	Not available	approx. 100	not classified as dangerous

4. First aid measures

4.1 General information:



Remove contaminated clothes. On danger of unconsciousness place victim stable in side position for transportation. On complaints and symptoms take care of medical treatment.

4.2 After inhalation:

On self-protection remove victim from danger area to fresh air, lay victim down calmly. Take care of medical treatment.

4.3 After skin contact:

Thoroughly rinse affected skin sections with much water and soap.

4.4 After eye contact:



Thoroughly rise affected eye for 15 minutes on spread lids under running water, protect unaffected eye, previous remove contact lenses. Take care for ophthalmological treatment.

4.5 After swallowing:

Let rinse mouth, let spit out liquid. Let victim drink much water.

4.6 Most important acute and delayed occurrence of symptoms and effects:

See chapter 11.

4.7 Medical advices:

Mineral dust. Decontamination, symptomatic treatment. No toxic, irritant or allergic reactions known. Mechanical irritating on skin and eyes possible.

5. Fire-fighting measures

5.1 Suitable extinguishing agents:

Carbon dioxide, extinguishing foam and powder, water mist.

	Material Safety Data Sheet according to EU regulation no. 1907/2006	Date: 03.09.2013
	Product name:	Actual revision: 07.05.2013
	Macro crystalline graphite (carbon) – without dust	Next revision: 08.05.2014
		Page: 3 of 10



5.2 For safety reasons unsuitable extinguishing agents:
Water jet.

5.3 Specific hazards by product, combustion products or formed gases:
Formation of carbon monoxide and carbon dioxide on combustion



5.4 Specific protective equipment on fire-fighting:
Use pressure air respirator at low aeration and in closed rooms. On extreme conditions a chemical protection suit might be necessary.



5.5 Further information:
None.

6. Accidental release measures

- 6.1 Person-related safety precautions:**
Wear suitable protective equipment (see also chapt. 8.2 – personal protection).
- 6.2 Measures for environmental protection:**
Not necessary.
- 6.3 Measures for cleaning / collecting:**
Remove by simple sweeping up or by vacuum cleaner.
- 6.4 Further information:**
See chapter 8 for personal protective equipment and chapter 13 for waste disposal.

7. Handling and storage

- 7.1 Handling.**
- 7.1.1 Information for safe handling:**
Avoid to breathe in dust, contacts with eyes, skin and clothes, long-term or repeated exposition.
- 7.1.2 Technical protection measures:**
On dust formation install exhaustion at the workplace. Good ventilation of working rooms, chemical-resistant floors and washing facilities at the workplace, emergency showers on activities with larger amounts.
- 7.1.3 Rules on handling:**
On workplaces only keep available amounts necessary for work progress. Don't leave receptacles stand open, use closed facilities with exhaust as densely as possible for decanting and bottling. Don't transport with pressure air, avoid dust formation, preferable handle with non-breakable receptacles or use suitable protection containers on transportation of breakable receptacles.
- 7.1.4 Information about fire and explosion protection:**



**Material Safety Data Sheet
according to EU regulation no. 1907/2006**

Date:
03.09.2013

Product name:

Actual revision:
07.05.2013

**Macro crystalline graphite (carbon) –
without dust**

Next revision:
08.05.2014

Page: 5 of 10

occurring substance (graphite)			exposure limit WEL (UK EH40)	dust 10 mg/m ³ inhalable dust	
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Measurement methods: MDHS 14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust.

8.1.2 Biological exposition limit values: none.

8.1.3 DNEL- and PNEC values:

DNEL	Employees	longterm-exposition	inhalation	Local effect	1,2 mg/m ³
DNEL	Final consumer	longterm-exposition	oral	Systematic effect	813 mg/kg/d
DNEL	Final consumer	longterm-exposition	inhalation	Local effect	0,3 mg/m ³

DNEL: Derived No Effect Level

8.2 Limitation and control of exposition:

8.2.1 Limitation of occupational exposition:

8.2.1.1 Technical measures to avoid exposition:

Preferably handle in closed gadgets. Provide very good ventilation of the workroom, exhaust dust at formation.

8.2.1.2 Personal protection:

Body protection:

Commonly special body protection not necessary, regular work clothing sufficient.

Respiratory protection:



Required on formation of dust:

Use half mask to EN 140 or full mask to EN 136 fitted with filter to EN 143-P1. Remind wearing time limits. On concentrations above limitations of filter devices or on oxygen contents above 17 % or on ambiguous conditions use self-contained respiratory protective devices.

Eye protection:



On mechanical handling with dust exposure sideways closed goggles to EN 166 are required.

Hand protection:



Protection gloves are not required commonly, on permanent skin contact gloves for low mechanic and substantial stress are enough. Protection gloves to be applied have to comply with the specifications of EU directive 89/686/EEC und EN 374, e.g.

Matter:	Butyl rubber	Thickness:	≥ 0,4 mm	Penetration time:	≥ 30 min.
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Skin protection:



Skin protection products are not as effective as protection gloves, so suitable protection gloves should be preferred if possible. If protection gloves can not be worn apply water insoluble skin protection substances to clean skin before start of work and after each break and thoroughly embrocate. Before breaks and at the end of work skin cleaning with water and soap necessary. After cleansing fatty skin care products should be applied.

Occupational hygiene:

Avoid aspiration of dust. Change contaminated clothes and don't reuse it until cleaned.

8.2.2 Limitation of exposition to environment:

Not relevant.

8.2.2 Limitation of exposition to final consumers:

Not relevant.



**Material Safety Data Sheet
according to EU regulation no. 1907/2006**

Date:
03.09.2013

Product name:

Actual revision:
07.05.2013

**Macro crystalline graphite (carbon) –
without dust**

Next revision:
08.05.2014

Page: 6 of 10

9. Physical and chemical properties

9.1 Appearance:

State of matter: solid
Color: light grey
Odor: odorless

9.2 Important information for health and environmental protection as well as for safety:

Fundamental data relevant for security:

Parameter	Value	Unit	Method	Remarks
pH value at 20 °C	neutral	----	----	----
Melting range	3.550	°C	----	----
Boiling point	Sublimation 3.750	°C	----	----
Flash point	n.a.	°C	----	----
Ignation temperature	approx. 600	°C	----	----
Vapor pressure	1 mm at 3.586 °C	----	----	----
Density	2,26	g/cm ³	DIN 51901	----
Bulk density	approx. 280	kg/m ³	DIN EN ISO 60	granul. dependent
Water solubility 20 °C	almost insoluble	g/l	----	----
Verteilungskoeffizient: n-Octanol/water log P _{ow}	n.d.	----	----	----
Viscosity dynamic	n.a.	mPa*s	----	----
Explosion limits:	lower:	n.a.	Vol.%	----
	upper:	n.a.	Vol.%	----

n.a. not applicable

n.d. not determined

9.3 Further information:

No further information of security relevant parameters necessary.

10. Stability and reactivity

10.1 Reactivity

Not reactive on compliance with indicated conditions of uses and storage.

10.2 Chemical stability

Chemically steady on compliance with indicated conditions of uses and storage.

10.3 Conditions to be avoided:

Very high temperatures.

10.4 Substances to be avoided:

Strong oxidizing agents.

10.5 Dangerous decomposition products:

Carbon monoxide and carbon dioxide by heating on air.

10.6 Dangerous chemical reactions:

Combustion hazard resp. Formation of combustable gases or fumes with chlorine trifluoride or fluorine.

11. Toxicological information



**Material Safety Data Sheet
according to EU regulation no. 1907/2006**

Date:
03.09.2013

Product name:

Actual revision:
07.05.2013

**Macro crystalline graphite (carbon) –
without dust**

Next revision:
08.05.2014

Page: 7 of 10

11.1 Toxicokinetics, metabolism and distribution:

Small quantities of suspended material injected in the anterior chamber of rabbits are mainly absorbed by leukocytes and cornea-endothelial cells but without proof of inflammable reactions. Suspension in physiological saline solution and installation in bronchia/trachea of rats resulted in accumulations in low lung area showing discoloration but without notice of macroscopic damaging effects. The low dosing group showed slightly inflammable effects reforming within 14 days.

11.2 Acute effects (toxicological tests):

11.2.1 Acute toxicity

Parameter	Value	Species	Method	Remarks
LD ₅₀ oral	> 2000 mg/kg	rat	OECD 401	----
LD ₅₀ inhalative	> 2000 mg/m ³ 4 h	rat	OECD 403	----

11.2.2 Corrosive and irritative effects:

Intake path	Result	Species	Method	Remarks
Skin	no irritation	rabbit	OECD 404	----
Eye	no irritation	rabbit	OECD 405	----

11.2.3 Sensibilisation:

Not sensibilizing mice during local lymph nodes test (OECD 429).

11.2.4 Subacute to chronic toxicity:

Parameter	Value	Species	Method	Remarks
NOEAL oral	813 mg/kg	rat	OECD 422	
NOEAL inhalative	> 2000 mg/m ³ 4 h	rat	OECD 412	

NOEAL: No Observed Adverse Effect Level/NOEAC: No Observed Adverse Effect Concentration

11.2.5 Mutagenicity:

Parameter	Value	Cell culture	Method	Remarks
Bacterial reverse mutation assay	negative	Salmonella typhimurium T98/100/1535/1537	OECD 473	With/without metabolic activation of rat liver S9
Chromosome aberration test	negative	Lung fibroblast Chinese hamster	OECD 473	With/without metabolic activation of rat liver S9

11.2.6 Cancerogenicity:

Classification of the U.S. National Institute of Health (NIH) in the National Toxicology Program (NTP) for natural graphite with quartz content: suspicion of carcinogenic effect on humans.

11.2.7 Reproductive toxicity:

Parameter	Value	Species	Method	Remarks
NOEAL oral	813 mg/kg	rat	OECD 422	

NOEAL: No Observed Adverse Effect Level

No evidence of teratogenicity or embryotoxicity has been monitored under the conditions of studies with rats.

11.3 Experience from practice:

Permanent inhalation of high dust concentrations of natural graphite can cause dyspnoea. Long-term chronic exposure to natural graphite can promote silicosis (Pneumoconiosis).

11.4 General remarks:



**Material Safety Data Sheet
according to EU regulation no. 1907/2006**

Date:
03.09.2013

Product name:

Actual revision:
07.05.2013

**Macro crystalline graphite (carbon) –
without dust**

Next revision:
08.05.2014

Page: 8 of 10

On appropriate handling and use as intended on our experience and on current information the product doesn't cause any effects harmful to health.

12. Ecological Information

12.1 Ecotoxicity:

Aquatic toxicity: Not known.

Effects on sewage plants: No disturbances on appropriate use.

Waters damaging toxicity of pure graphite:

Crustacean toxicity	EC ₅₀	OECD 203	> 100 mg/l 48 h
Fish toxicity	LC ₅₀	OECD 202	> 100 mg/l 96 h
Algae toxicity	IC ₅₀	OECD 201	100 mg/l 72 h

12.2 Mobility:

No information available

12.3 Persistence and degradability:

Biological degradation: No information available.

Abiotal degradation: No information available.

12.4 Bioaccumulative potential:

Bioaccumulation ist not expectable.

12.5 Other adverse effects:

Ozone degradative potential and greenhouse effect are not known.

12.6 PBT and vPvB assessment:

Product does not contain any PBT or vPvB substances according to REACH annex XIII criteria.

12.7 Classification according to VwVwS (Directive concerning substances hazardous to water):

Nwg – not classified as hazardous to water (classification according to annex 1 – No. 801 – carbon)

12.6 Further information:

Macro crystalline natural graphite is a chemical inert and not polluting material.

13. Disposal considerations

13.1 Disposal of residues and wastes of the product:

Residues and wastes maybe recycled, contaminated wastes can be disposed of in an incineration site.

European waste inventory:	01 04 99	Wastes not otherwise specified.
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13.2 Disposal of contaminated packaging:

Contaminated packaging are to be brought to an utilisation or disposal by redemption systems or licenced waste management service providers.

European waste inventory:	15 01 06	Mixed Packaging.
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13.3 Disposal of completely emptied packaging:

	Material Safety Data Sheet according to EU regulation no. 1907/2006	Date: 03.09.2013
	Product name:	Actual revision: 07.05.2013
	Macro crystalline graphite (carbon) – without dust	Next revision: 08.05.2014
		Page: 9 of 10

Completely emptied plastic packaging can be brought to a substantial utilisation.

European waste inventory:	15 01 02	Plastic packaging.
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14. Transport information

- 14.1 UN Number: not relevant.
- 14.2 UN proper shipping name: not relevant.
- 14.3 Transport hazard class(es): not relevant.
- 14.4 Packing group: not relevant.
- 14.5 Environmental hazards: not relevant.
- 14.6 Special precautions for user: not relevant.
- 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
Not relevant.
No hazardous material as defined in ADR/RID/AND/GGVSEB, ICAO/IATA, IMDG.

15. Regulatory information

- 15.1 **EU guidelines**
 - 15.1.1 **Chemical safety assessment acc. to EU regulation no. 1907/2006:**
A chemical safety assessment (CSA) according to Art. 14 par. 1 Regulation (EC) No. 1907/2006 (REACH) of graphite is not yet available.
 - 15.1.2 **Classification and labelling acc. to Directive 67/548/EEC (DSD), 1999/45/EC (DPD) and 1272/2009 (CLP):**
The product is not due to classification and labelling.
 - 15.1.3 **Hazard determinant compounds for labelling:** none
 - 15.1.4 **Specific labelling of designated preparations:** none.
 - 15.1.5 **Authorisations and / or use restrictions:** none.
 - 15.1.6 **Further EU provisions:** none.
 - 15.1.7 **Information on EU directive 1999/13/EC (VOC directive) for limitation of VOC emissions:**
None.
- 15.2 **National regulations (UK):**
 - 15.2.1 **Classification and labelling:**
The product is not due to labelling according to UK regulations.
 - 15.2.2 **Other UK regulations and guidances**
Health and Safety at Work Act 1974.
The Management of Health and Safety at Work regulations 1992.
L5 Control of substances hazardous to Health. The Control of Substances Hazardous to Health Regulations 2002. Approved codes of practice and guidance.
Guidance Note EH40 – Occupational Exposure Limits.
BS EN ISO 10882-1:2001 – health and safety in welding and allied processes – sampling of air-borne particles and gases in the operator’s breathing zone – part 1: sampling of airborne particles.



**Material Safety Data Sheet
according to EU regulation no. 1907/2006**

Date:
03.09.2013

Product name:

Actual revision:
07.05.2013

**Macro crystalline graphite (carbon) –
without dust**

Next revision:
08.05.2014

Page: 10 of 10

16. Other information

16.1. Wording of the R-Phrases and H-Statements from chapter 2 and 3: not applicable.

16.2. Instruction references: none.

16.3. Recommended restriction(s) of use: not for use by private consumers.

16.4. Further information and points of contact for technical information:

MSDS creating department: AMG Mining AG
Langheinrichstrasse 1
D-94051 Hauzenberg
Phone: +49 (0) 8586 609-0
Fax: +49 (0) 8586 609-110
eMail: customerservice@gk-graphite.com
Internet: <http://www.gk-graphite.com>

Point of contact: GK Laboratory
Phone: +49 (0) 8586 609-167
Fax: +49 (0) 8586 609-114
eMail: reach@gk-graphite.com

16.5. Data sources for creation of material safety data sheets:

Hazardous substances information system of the German Federation of Institutions for Statutory Accident Insurance and Prevention (GESTIS)
Internet: <http://www.hvbg.de/d/bia/gestis/stoffdb/index.html>.
Hazardous Substances Data Bank (HSDB) – U.S. National Library of Medicine (NLM)
Internet: <http://toxnet.nlm.nih.gov>
Hommel interaktive 4.0 – Handbook of dangerous goods
Internet: <http://www.springer.com/dal/home/chemistry>.
List of approved workplace exposure limits (WEL), Health and Safety Executive, UK, Oct. 1st 2007
Internet: <http://www.hse.gov.uk/coshh/table1.pdf>.
CRC Handbook of Chemistry and Physics, 88th Edition, 2007-2008
Internet: <http://www.hbcpnetbase.com>.

16.6. Amended information and reasons for amendments:

Prior version:	Version no.:	3.1	Date:	08.11.2012
Actual version:	Version no.:	3.2	Date:	07.05.2013
Kind of amendment:	Revision of chapter 9.2			
Reason of amendment:	Change of DIN method for bulk density			

16.7. Remarks:

This information exclusively describes the security requests on the product and base on the status of our knowledge. They don't present any guarantee on properties of the product in the sense of legal warrantee regulations. Please learn more about the deliver properties from the product data sheets. If the product named in this safety data sheet is blended or processed with other materials the information of this safety data sheet can't be transferred to the produced new material until otherwise stated.