

EC safety data sheet according to Regulation (EG) Nr. 1907/2006
(changed by EU (EU) Nr. 453/2010)

Current version: 2.0
Issued: 20.02.2024
Replaced version: 1.0
Issued: 14.04.2018
Version: 2.0



1. Identification of the substance or mixture and of the company

1.1 Product identifier

Substance name/Trade name: Graphene and Graphene-Nanoplatelets (Graphite)

Identification numbers:

EG-No.: 231-955-3
CAS-No.: 7782-42-5
REACH registration number not yet granted

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

Relevant identified uses of the substance or mixture:

Electrical and thermal conductive additive
Friction modifier
Carbon carrier
Lubricant

Uses advised against:

None known

1.3 Details of the supplier of the safety data sheet

Producer / Supplier:

ProGraphite GmbH
Dr.-Schindler-Str. 9
94107 Untergriesbach
Germany
Telefon +49 (0)8593 9383 188
Mobil +49 (0)160 7586 976
info@pro-graphite.com

1.4 Emergency telephone number

+49 (0)8593 9383 188
+49 (0)160 7586 976
Monday to Friday: 8:00 – 18:00 h

2. Hazards identification

2.1 Classification of the substance or mixture

This product does not meet the classification and labelling criteria given in the Regulation (EC) No 1272/2008 (CLP). This product does not meet the classification and labelling criteria given in the Dangerous Preparations Directive 67/548/EC (DSD).

2.2 Label elements

Not relevant

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2.3 Other Hazards

Slightly irritating on inhalation, skin and eye contact. Further hazards unknown.

Additional hazard notes for human and environment:

Possible harmful physico-chemical effect:

Risk of creation of ignitable mixture unlikely but possible in case of dust generation or during handling of very fine-grained powder.

Possible harmful effect on human and related symptoms:

Possibility of minor irritation phenomena of skin and mucosa, due to mechanical effect.

3. Composition/information on ingredients

3.1 Substances

Chemical characterization:

Substance name: Graphene and Graphene-Nanoplatelets (Graphite)
Chemical characterisation: Graphitic carbon

Identification numbers:

EG-No.: 231-955-3
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3.2 Mixtures

Not applicable. The product is not a mixture

4. First aid measures

4.1 Description of first aid measures

General information:

In case of persisting symptoms and adverse effects, consult a physician. In case of unconsciousness, handling and transport in recovery position.

After inhalation:

Remove affected person from the immediate area. Ensure supply of fresh air and respiration.

After skin contact:

Clean affected skin with plenty of water and soap.

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After eye contact:

Wash the eyes with running water. Consult an ophthalmologist if adverse symptoms persist.

After ingestion:

Rinse out mouth with water. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Most important symptoms are listed in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. Firefighting measures

5.1 Extinguishing media

Water spray jet, extinguishing powder, alcohol-resistant foam, sand, carbon dioxide.

5.2 Special hazards arising from the substance or mixture

In the event of fire, the following can be released: Carbon monoxide (CO); Carbon dioxide (CO₂).

5.3 Advice for firefighters

Use self-contained breathing apparatus if necessary.

5.4 Additional information

No data available

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

Avoid dust formation. Avoid inhalation of vapour and dust. Avoid contact with skin, eyes and clothing. High risk of slipping due to leakage/spillage of product.

For emergency responders:

Personal protective equipment (PPE) - see Section 8. In case of emergency, use of personal protective equipment [DIN EN 469, EN 12021].

6.2 Environmental precautions

No data available

6.3 Methods and material for containment and cleaning up

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Sweep up or use a suitable vacuum cleaner.

6.4 Reference to other sections

No data available

7. Handling and storage

7.1 Precautions for safe handling

Avoid inhalation of dust, contact with eyes, skin and clothing. Avoid prolonged or repeated exposition. Provide good ventilation of working area (local exhaust ventilation, if necessary). If workplace exposure limits are exceeded, respiratory protection approved for the particular job must be worn.

General protective and hygiene measures:

In case of dust generation at workplace, use local exhaust ventilation. Avoid inhalation of dust, contact of material with eyes, skin and clothing as well as prolonged or repeated exposition.

Advice on protection against fire and explosion:

Substance is combustible. Fire extinguishing installations are to be held available. Avoid dust generation. Dust should be aspirated immediately on the spot. Avoid electrostatic charging.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep container tightly closed, protected from light and dry.
Keep in a dry place with good ventilation.
Storage category (TRGS 510): combustible solids

7.3 Specific end uses

No data available

8. Exposure controls/personal protection

8.1 Control parameters

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8.1.1 Occupational exposure limit values

Substance	EG-No.	CAS-No.	Threshold	Time-weighted average per work shift	Remarks
Graphite	231-955-3	7782-42-5	General dust emission threshold according to TRGS 900	1,25 mg/m ³ A 10 mg/m ³ E	E-Fraction: exceedance factor 2, 15 min, 1x per work shift * A-Fraction: exceedance factor 8, 15 min, 4x per work shift *

Graphite CAS No. 7782-42-5 TRGS 900 - Threshold

Remarks:

General dust emission threshold (Germany).

8.1.2 DNEL- und PNEC- values

Not applicable

8.2 Exposure controls

8.2.1 Technical measures for exposure control

Processing and handling in closed facility, if possible. Ensure good ventilation of workplace.
Aspiration of dust right at point of origin.

8.2.2 Individual measures for exposure control - Personal protective equipment



Respiratory protection:

In case of dust exposure, a respiration protection (respiration filter mask type P1 (EN 143)) must be worn. Use respiratory masks and components tested and approved under government standards such as NIOSH (US) or CEN (EU).



Eye / face protection:

In case of dust exposure use safety glasses with integrated side protection shield according to DIN (EN 166). Only use safety glasses or other eye protection equipment tested and approved under government standards such as NIOSH (US) or CEN (EU).



Hand protection:

The use of safety gloves complying with directive 89/686/EWG and European Standard EN 374 is advised in the event of frequent skin contact with the product. Recommended safety gloves, e.g., nitrile rubber, 0.11mm thickness, breakthrough time of 480 minutes.

Body protection:

No additional requirements.

Workplace hygiene:

Avoid inhalation of dust.

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8.2.3 Environmental exposure controls

Do not discharge into the drains/surface waters/groundwater.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Physical state	solid
b) Appearance/form	flaky to rounded particles
c) Odour	odourless
d) Geruchsschwelle	No data available
e) pH-value	neutral
f) Melting point	Melting range 3652-3697°C (lit.)
g) Boiling point	No data available
h) Flashpoint	No data available
i) Evaporation rate	No data available
j) Flammability	No data available
k) Upper and lower explosion limit	No data available
l) Vapour pressure	No data available
m) Vapour density	No data available
n) Density	2.26 g/cm ³
o) Water solubility	Slightly soluble
p) Distribution coefficient n-Octanol/Water	No data available
q) Auto-ignition temperature	No data available
r) Decomposition temperature	No data available
s) Viscosity	No data available
t) Explosive properties	Dust ST1
u) Oxidising properties	No data available

9.2 Other information

No further information of security relevant parameters necessary.

10. Stability and reactivity

10.1 Reactivity:

No data available

10.2 Stability:

Stable under recommended storage conditions.

10.3 Possibility of hazardous reaction:

No data available

10.4 Conditions to be avoided:

Very high temperatures.

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10.5 Incompatible materials:

Strong oxidants

10.6 Hazardous decomposition products:

Carbon oxides by heating in air/oxygen.

11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity:

LD50 oral - rat - female - > 2.000 mg/kg

Method: OECD 423

LC50 inhalation – rat – male and female – 4h – 2.000 mg/m³

Skin corrosion/irritation:

Species: rabbit

Result: No irritation

Method: OECD 404

Serious eye damage/eye irritation:

Species: rabbit

Result: No irritation

Method: OECD 405

Respiratory or skin sensitization:

Species: mouse

Result: non-sensitizing

Method: OECD 429

Germ cell mutagenicity:

Test type: bacterial reverse mutation

S. typhimurium

Result: negative

Carcinogenicity:

No data available

Reproduction toxicity:

No data available

11.2 Additional information

High dust concentrations may cause respiratory problems in case of prolonged inhalation.

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12. Ecological Information

12.1 Toxicity

Toxicity to fish (acute)

LC50: >100 mg/l
Duration of exposure: 96h
Species: Danio rerio
Method: OECD 203

Toxicity to fish (chronic)

No data available

Toxicity to Daphnia (acute)

EC50: >100 mg/l
Duration of exposure: 48h
Species: Daphnia magna
Method: OECD 202
statischer Test EC50 - Daphnia magna (Großer Wasserfloh) - > 100 mg/l – 48 h

Toxicity to Daphnia (chronic)

No data available

Toxicity to algae (acute)

EC50: >100mg/l
Duration of exposure: 72h
Species: Pseudokirchneriella subcapitata
Method: OECD 201

Toxicity to algae (chronic)

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This product/mixture does not contain components in concentrations of 0.1% or above and classified as PBT or vPvB

12.6 Other adverse effects

No data available

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12.7 Other information:

Graphite is a chemically inert material which is not harmful to the environment.

13. Disposal considerations

13.1 Water treatment methods

Produkt

Residues have to be disposed of in accordance with the regulations for waste removal and in agreement with a designated disposal company.

Packaging

Dispose of as unused product

14. Transport information

The product is not subject to ADR/GGVS/RID/GGVE/ICAO/IATA/IDMG regulations.

14.1 UN-Number

ADR/RID: - IMDG: - IATA: -

14.2 Regular UN shipping name

ADR/RID/IMDG/IATA: - no dangerous goods

14.3 Transport hazard class

ADR/RID/IMDG/IATA: - no dangerous goods

14.4 Packaging group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards

ADR/RID: - IMDG Marine pollutant: - IATA: -

14.6 Special precautions for user

No data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code

Not relevant

15. Regulatory information

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

Non-hazardous to water

15.1.1 Chemical safety assessment according to directive EG 1907/2006 (REACH)

A chemical safety assessment (CSA) according to REACH is not yet available for graphite.

15.1.2 Classification and labelling according to EU directive 67/548/EWG und 1999/45/EG:

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The substance is not subject to classification.

15.1.3 Hazard symbols, Hazard- and Precautionary statements

Not applicable

15.1.4 Special labelling of particular preparations / Hazard-determining components of labelling

Not applicable

15.1.5 Approval and/or restrictions on use

Not applicable

15.1.6 Other EU regulations

Not applicable

15.1.7 Other requirements, restrictions and prohibitions

Not applicable

16. Other information

Changes in this version compared to the previous one

version 1

Data sources

- Hommel interaktiv
- Gefahrstoffinformationssystem der gewerbl. BG (GESTIS)
- CRC Handbook of Chemistry and Physics
- MSDS of other producers
- Ullmann: Technische Chemie

Training for employees

No specific training needed. General training on processing, handling and storage of dusty materials sufficient.

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Further information

Issuer of safety data sheet and contact

ProGraphite GmbH
Dr.-Schindler-Str. 9
94107 Untergriesbach
Germany

Telephone +49 (0)8593 9383 188
Mobile +49 (0)160 7586 976
info@pro-graphite.com

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