

Safety data sheet

According to Regulation (EC) No. 1907/2006

2DD-W

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Name: Aqueous dispersion of graphene Trade name:

2DD-W

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

Material for research and for the production of composite materials.

1.3. Details of the supplier of the safety data sheet

Company: 2D Innovation GmbH,

D - 86161 Augsburg, Haunstetter Str.112,

Responsible department: Research and production of composite materials.

Tel. +49 821 899 655 40

E-mail of competent person: 2d@2d-innovation.de

1.4. Emergency number

+49(0)89 19240, advice in German.

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation EC No. 1272/2008

Not classified. Not a dangerous substance or mixture.

2.2. Label elements

Labeling EC Regulation 1272/2008

Not a dangerous substance or mixture. The product is not classified and labelled according to GHS.

Safety instructions

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P262 Do not get in eyes, on skin, or on clothing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove any contact lenses if possible. Continue rinsing.

P410 Protect from sunlight.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

Results of PBT and vPvB assessment

PBT: not applicable

vPvB: not applicable

Section 3: Composition/information on ingredients

3.1. Substances

Product is a mixture

3.2. Mixtures

Hazardous ingredients ID number % EC1272/2008

Water 95 – 92

Graphene 5 – 8

Text of the H-statements listed in section 16

Section 4: First aid measures

4.1. Description of first aid measures

General information:

If you feel unwell, consult a doctor.

After inhalation:

Supply fresh air, consult a doctor if you experience symptoms.

After skin contact:

Wash with soap and water.

After eye contact:

Rinse eyes under running water for several minutes with the eyelids open.

Remove any contact lenses and continue rinsing. If symptoms persist, consult a doctor.

After swallowing:

Rinse mouth and drink plenty of water.

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

No further relevant information available.

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

No further relevant information available.

Section 5: Firefighting measures**5.1. Extinguishing media**

The product itself does not burn. Adapt extinguishing measures to the surroundings.

Suitable: Water, foam, CO₂, extinguishing powder.

Unsuitable: None.

Protective equipment: Self-contained breathing apparatus.

5.2. Special hazards arising from the substance

Specific risks

The product is not flammable.

5.3. Advice on fire fighting**Special protective equipment for fire fighters:**

In the event of fire, wear self-contained breathing apparatus. Particular risk of slipping due to leaked/spilled product in contact with water.

Further information:

Knock down gases/vapours/mist with a water spray jet.

Section 6: Measures in the event of accidental release**6.1. Personal precautions, protective equipment and emergency procedures**

Note for personnel not trained for emergencies: Do not inhale vapor/aerosol. Avoid contact with the substance.

Ensure adequate ventilation.

Clear the danger zone, proceed according to emergency plan, consult an expert.

Avoid inhaling dust/aerosol. If the workplace-related limit values are exceeded and/or in the event of release (dust), the specified respiratory protection must be used.

6.2. Environmental protection measures

Do not allow to enter drains or waterways.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, sawdust...). Dispose of the absorbed material in accordance with regulations.

6.4. Reference to other sections

For disposal instructions, see section 13.

Section 7: Handling and storage**7.1. Precautions for safe handling**

Put on suitable personal protective equipment (see section 8). Do not eat,

drink or smoke in the work area. Wash hands thoroughly before eating. Change contaminated clothing before entering the social rooms.

Avoid dust or aerosol formation.

7.2. Conditions for safe storage, including any incompatibilities

Store in a dry place. Keep container closed. Store only in the original container. Protect from frost and light.

7.3. Specific end use(s)

No further relevant information available.

Section 8: Exposure controls/personal protection equipment**8.1. Parameters to be monitored****Components with workplace-related limit values to be monitored**

Graphene

Value

AGW

Parameters to be monitored

4mg/m³

Basis

TRGS 900 Workplace exposure limits

Note from the MAK Commission

There is no need to fear a risk of damage to the fetus if the workplace exposure limit and the biological limit value (BGW) are observed

8.2. Limiting and monitoring exposure**Individual protective measures – personal protective equipment****Technical protective measures:**

Technical measures and the application of suitable work procedures have priority over the use of personal protective equipment. See section 7.

Eye protection:

Safety goggles or face shield.

Skin and body protection

Protective clothing.

Hand protection:

Experience has shown that the glove materials polychloroprene (neoprene), nitrile rubber, butyl rubber, fluororubber (Viton) and polyvinyl chloride (PVC) are suitable for protection against undissolved solids.

Respiratory protection:

Required if vapors/aerosols/dusts occur.

Recommended filter type: Filter P2

The employer must ensure that maintenance, cleaning and testing of respiratory protection equipment is carried out in accordance with the manufacturer's user information and documented accordingly.

Hygienic measures:

Wash hands, forearms and face after work. Change contaminated clothing immediately and wash before reuse.

Limiting and monitoring environmental exposure:

Avoid spreading into the environment.

Section 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

| | |
|--|---------------------|
| Form | liquid |
| Color | light gray to black |
| Odor | none |
| pH value | 6.8 to 7.3 |
| Melting range: | 0°C |
| Boiling point | 100°C |
| Boiling range | no data available |
| Flash point | no data available |
| Evaporation rate | no data available |
| Flammability | no data available |
| Explosion limit lower explosion limit: | no data available |
| upper explosion limit: | no data available |
| Vapor pressure | no data available |
| Solubility | complete in water. |
| log Pow | no data available |
| Ignition temperature | no data available |
| Flammability | no data available |
| Flash point | no data available |
| Density | no data available |
| Bulk density | no data available |

9.2. Other information

Not available

Section 10: Stability and reactivity**10.1. Reactivity**

Not reactive.

10.2. Chemical stability

Stable under suitable storage conditions (see section 7).

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Avoid dust formation.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

None known.

Section 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity**

No data available.

Irritation

No data available.

Sensitization

No data available.

Genotoxicity in vitro

Not determined.

Carcinogenicity

Not determined.

Reproductive toxicity

Not determined.

Specific target organ toxicity - single exposure:

Not determined.

Specific target organ toxicity - repeated exposure:

Not determined.

Aspiration hazard:

Not determined.

Section 12: Ecological information**12.1. Toxicity****Fish toxicity**

Not determined.

Daphnia toxicity:

Not determined.

12.2. Persistence and degradability

Completely degradable.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

A PBT/vPvB assessment is not available.

12.6. Other adverse effects

No significant effects or critical hazards known.

12.5. Results of PBT and vPvB assessment

The substance does not meet the criteria for a PBT/vPvB assessment.

12.6. Other adverse effects

None.

Section 13: Disposal considerations**13.1. Waste treatment methods****Recommendation:**

The generation of waste should be avoided or minimized. The product must not enter the sewage system. Product residues must be disposed of in accordance with national and regional regulations.

Disposal methods

No special disposal methods are necessary, but official regulations must be observed.

Contaminated packaging

No special disposal methods are necessary, but official regulations must be observed.

Section 14: Transport information

14.1 UN number or ID number is not subject to transport regulations

14.2 UN proper shipping name not assigned

14.3 Transport hazard class(es) none

14.4 Packing group not assigned

14.5 Environmental hazards not environmentally hazardous according to the dangerous goods regulations

14.6 Special precautions for user

No additional information is available.

14.7. Bulk transport according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

Section 15: Regulatory information

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

National regulations:

Water hazard class: WGK1 slightly hazardous to water.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out for this product.

Section 16: Other information

Area issuing data sheet: Beverage treatment products

The information in this safety data sheet, as of the date of issue, is believed to be true and correct. No guarantee is given as to the accuracy or completeness of this information, recommendations or suggestions of any kind. Since the conditions of use are beyond the control of our company, the user is responsible for creating conditions that allow for the safe use of this product. The information in this sheet is not an analytical specification.

H270 May cause or intensify fire; oxidizer.

H331 Toxic if inhaled.

H400 Very toxic to aquatic life.

H315 Causes skin irritation.

H335 May cause respiratory irritation.