SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product Identifier: (4N) 99.99% Mesoporous Carbon

Product Code: C-MESO-04-P

CAS Number: 1333-86-4

Relevant identified uses of the substance: Scientific research and development

Supplier details:
American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351
Emergency telephone number: +1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
GHS08 Health hazard
Carc. 2 H351 Suspected of causing cancer.
GHS07
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.
GHS label elements
The substance is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms

GHS07 GHS08
Signal word Warning
Hazard-determining components of labeling:
Carbon black
Hazard statements
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.
Precautionary statements
P262 Do not get in eyes, on skin, or on clothing.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
Classification system:
NFPA ratings (scale 0 - 4)
<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
HMIS-ratings (scale 0 - 4)
| Health | Fire | Reactivity |
| *1     | 0    | 0         |
Other hazards
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS # / Substance Name
1333-86-4 Carbon black
Identification number(s)
EC number: 231-153-3

SECTION 4. FIRST AID MEASURES

Description of first aid measures
If inhaled: Supply fresh air; consult doctor in case of complaints.
In case of skin contact: Immediately rinse with water.
In case of eye contact:
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
If swallowed: If symptoms persist consult doctor.
Information for doctor:
Most important symptoms and effects, both acute and delayed:
No data available
Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing agents:
SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Not required.
Environmental precautions: Not required.
Methods and materials for containment and cleanup:
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Reference to other sections:
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

Handling:
Precautions for safe handling: No special precautions are necessary if used correctly.
Information about protection against explosions and fires: No special measures required.
Conditions for safe storage, including any incompatibilities:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep receptacle tightly sealed.
Specific end use(s): No data available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems: No further data; see item 7.
Control parameters:
Components with limit values that require monitoring at the workplace:
1333-86-4 Carbon black
PEL Long-term value: 3.5 mg/m³
REL Long-term value: 3.5* mg/m³
*0.1 in presence of PAHs; See Pocket Guide Apps.A+C
TLV Long-term value: 3* mg/m³
*inhalable fraction
Additional information: The lists that were valid during the creation were used as basis.
Exposure controls:
Personal protective equipment:
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:
Protective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:
Tightly sealed goggles

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance:
Form: Powder
Color: Black
Odor: Odorless
Odor threshold: No data available.

pH at 20 °C (68 °F): <7
Melting point/Melting range: 3652-3697 (subl °C (6606-6687 (subl °F)
Boiling point/Boiling range: 4200 °C (7592 °F)
Flash point: N/A
Flammability (solid, gas): Product is not flammable.

Ignition temperature:
Decomposition temperature: No data available.
Autoignition: No data available.
Danger of explosion: Product does not present an explosion hazard.

Explosion limits:
Lower: No data available.
Upper: No data available.

Vapor pressure: 1mm (3586 hPa (1mm (2690 mm Hg)

Density at 20 °C (68 °F): bulk 0.21g/ g/cm³ (bulk 1.752g/ lbs/gal)

Bulk density at 20 °C (68 °F): 20-200 kg/m³
Relative density No data available.
Vapor density N/A
Evaporation rate N/A
Solubility in / Miscibility with Water: Insoluble.
Partition coefficient (n-octanol/water): No data available.
Viscosity:
Dynamic: N/A
Kinematic: N/A
Solvent content:
Organic solvents: 0.0 %
VOC content: 0.0 g/l / 0.00 lb/gl
Solids content: 100.0 %
Other information No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity No data available
Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
Possibility of hazardous reactions No dangerous reactions known.
Conditions to avoid No data available
Incompatible materials: No data available
Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
LD/LC50 values that are relevant for classification:
1333-86-4 Carbon black
Oral LD50 10000 mg/kg (rat)
Primary irritant effect:
on the skin: No irritant effect.
on the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
Carcinogenic categories
IARC (International Agency for Research on Cancer)
1333-86-4 Carbon black 2B
NTP (National Toxicology Program)
Substance is not listed.
OSHA-Ca (Occupational Safety & Health Administration)
Substance is not listed.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity: No data available
Persistence and degradability No data available
Behavior in environmental systems:
Bioaccumulative potential No data available
Mobility in soil No data available
Additional ecological information: Not known to be hazardous to water.
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A
Other adverse effects No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation:
Must not be disposed of together with household garbage. Do not allow product to enter drains, sewage systems, or other water courses system.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

UN-Number
DOT, ADN, IMDG, IATA not regulated
UN proper shipping name
DOT, ADN, IMDG, IATA not regulated
Transport hazard class(es)
DOT, ADN, IMDG, IATA
Class not regulated
Packing group
DOT, IMDG, IATA not regulated
Environmental hazards:
Marine pollutant: No
Special precautions for user N/A
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A
UN "Model Regulation": not regulated

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
Sara
Section 355 (extremely hazardous substances):
Substance is not listed.
Section 313 (Specific toxic chemical listings):
Substance is not listed.
TSCA (Toxic Substances Control Act):
Substance is listed.
Proposition 65
Chemicals known to cause cancer:
Substance is listed.
Chemicals known to cause reproductive toxicity for females:
Substance is not listed.
Chemicals known to cause reproductive toxicity for males:
Substance is not listed.
Chemicals known to cause developmental toxicity:
Substance is not listed.

Carcinogenic categories
EPA (Environmental Protection Agency)
Substance is not listed.

TLV (Threshold Limit Value established by ACGIH)
1333-86-4 Carbon black A4

NIOSH-Ca (National Institute for Occupational Safety and Health)
Substance is listed.

GHS label elements
The substance is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms
GHS07 GHS08

Signal word Warning
Hazard-determining components of labeling:
Carbon black

Hazard statements
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.

Precautionary statements
P262 Do not get in eyes, on skin, or on clothing.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present
and easy to do. Continue rinsing.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.