

Safety Data Sheet



1. Identification of the Substance/Mixture and the Supplier

Supplier : National Institute of Advanced Industrial Science and Technology (AIST)
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Identity of Substance/Mixture : Certified reference material NMIJ CRM 5715-a
 Carbon Black (Nitrogen Specific Volume Adsorbed – BET20)
 Recommended use of the chemical and restriction on use : This reference material is intended for use in the quality control and validation of analytical methods and instruments used to measure specific volume of adsorbed nitrogen and determine specific surface area with the multipoint Brunauer–Emmett–Teller (BET) method. Do not use this reference material for other purposes than testing/research.

2. Hazard Identification

GHS classification

Health Hazards :
 Carcinogenicity : Hazard Category 2
 Specific target organ toxicity (repeated exposure) : Hazard Category 1 (Respiratory system)

GHS-labeling element :



Signal word : Danger
 Hazard statement : Suspected of causing cancer
 Causes damage to respiratory system through prolonged or repeated exposure
 Precautionary statement : [Precaution]
 Obtain instruction manual before use.
 Do not handle until all safety precautions are read and understood.
 Keep cool. Protect from sunlight.
 Do not breathe dust/smoke/gas/mist/vapors/spray.
 Wash hands thoroughly after handling.

Do not eat, drink, or smoke when using this reference material.
Wear protective gloves/protective clothing/eye protection /face protection .

[Response]

If exposed or concerned: Get medical advice/attention.

If you feel unwell, get medical advice/attention.

[Storage]

Keep container tightly closed. Protect from direct sunlight and store in a clean place at temperature of 5 °C to 35 °C.

[Disposal]

Dispose of this reference material in accordance with applicable legislation and local government ordinance.

Entrust disposal of this reference material to a professional waste disposal company licensed by prefectural governor.

The other hazards than the above do not result in classification or are not classifiable

3. Composition/Information on Ingredients

Substance or mixture	: Single substance
Chemical name	: Carbon black (derived from minerals)
CAS number	: 1333-86-4
Content	: 98 % or more
Chemical formula	: C (graphite)
Molecular weight	: 12.01
Reference number in gazetted list in Japan	: Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : (5)-3328, (5)-5222 Industrial Safety and Health Act : —
Impurities and additives	No data

4. First-Aid Measures

If inhaled	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Get medical advice/attention.
If on skin	: Rinse skin with clean water. Remove/Take off contaminated clothing/shoes, etc. If skin irritation or rash occurs: Get medical advice/attention.
If in eyes	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
If swallowed	: Rinse mouth thoroughly with water. Get medical advice/attention.

Protection of first-aiders : Use appropriate personal protective equipment for eyes and skin, if necessary.

5. Fire-Fighting Measures

- Suitable extinguishing media : Water spray, Foam, Powder, Carbon dioxide (CO₂), Nitrogen gas (N₂), Dry sand
- Unsuitable extinguishing media : Direct water jet
- Fire-specific hazards : Heating and exposure to sparks and flames may cause a fire. Intensive heating may cause a fire. In case of fire: May emit irritating, corrosive, and toxic gases (CO₂, CO).
- Specific fire-fighting method : Move containers from fire area if this can be done without risk. Eliminate ignition sources if safe to do so.
- Protection of fire-fighters : Fight fire from the windward, avoid breathing hazardous gases. Use personal protective equipment such as fire-resistant clothing, heat-resistant clothing, protective clothing, self-contained compressed air breathing apparatus, closed circuit breathing apparatus, rubber gloves, rubber boots.

6. Accidental Release Measures

- Personal precautions, personal protective equipment, and emergency procedures : Remove potential ignition sources from the vicinity promptly. Make fire-fighting kit available to be prepared for potential ignition. Use appropriate personal protective equipment to avoid contact with skin and eyes and contamination of personal clothing. Ventilate the affected areas thoroughly, if it is in an indoor environment, until the clean-up operation is completed. Use appropriate personal protective equipment during the operation to avoid skin contact of splash etc. and inhalation of dust and gas.
- Environmental precautions : Take precautions to prevent spillages from draining into rivers etc. to adversely impact the environment. Make it sure to appropriately treat contaminated wastewater in order to prevent untreated wastewater from being released into the surrounding environment.
- Recovery and neutralization : Collect spillages in empty containers and dispose of them later. Damp with water and reduce dust in air to prevent scattering.
- Prevention of secondary disaster : Eliminate all ignition sources immediately (No smoking, sparks, or flame in surrounding areas). Cover affected area with plastic sheet to prevent scattering.

7. Handling and Storage

Handling

- Engineering precautions/Local and general ventilation : Handle in well-ventilated place.
Prevent this reference material from leaking, overflowing, and scattering, and avoid vapor emission.
Avoid breathing emitted vapors or dust.
Keep container tightly closed after use.
Make a place handling this reference material a restricted area to keep out unauthorized people.
Do not take contaminated clothes out of the workplace.
As this reference material is easy to scatter, equipment used in handling such as transportation, storage and use should be enclosed as much as possible. If it is unavoidable to handle this reference material in an open system, take measures to prevent scattering. Provide local and general ventilation as necessary.
- Precautions for safe handling : Wash hands thoroughly and gargle after handling.
Do not eat, drink or smoke when using this reference material.
Keep cool. Protect from sunlight.
Obtain operating instruction before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust or fume.
- Incompatible substances or mixtures : No data available
- Hygiene controls : Handle this reference material in accordance with industrial health and safety codes.
Restrict eating, drinking, or smoking to a designated area.
Wash hands and face thoroughly and gargle after handling.
Do not bring gloves and other contaminated personal protective equipment into staff room.
Make a place handling this reference material a restricted area to keep out unauthorized people.
Use appropriate protective equipment to avoid inhalation and contact with eyes, skin, and clothing.

Storage

- Appropriate storage conditions : Store in a closed container. Protect from direct sunlight. Store at temperature of 5 °C to 35 °C.
Keep away from strong oxidizers such as chlorate and nitrate.

- Safe container packaging material : Glass
Undamaged sealable container

※Refer to the Certificate for appropriate storage conditions and instructions for use as a reference material.

8. Exposure Controls/Personal Protection

- Threshold limit value :

3.0 mg/m³

Permissible concentration

- ACGIH TLV-TWA : 3.0 mg/m³
- Values recommended by Japan Society for Occupational Health : 1 mg/m² (respirable fraction), 4 mg/m³(Total dust)

- OSHA PEL TWA : 3.5 mg/m³

Engineering control

- Ventilation/Exhaust : Use only in an enclosed system or install local ventilation equipment to prevent exposure.
Install handwashing facilities, eye washers and showers near handling place as necessary.
Provide local exhaust or general ventilation and keep dust concentration below the threshold limit value

- Safety control/Gas detection : —

- Storage precautions : Strict ban on fire. Protect from direct sunlight. Keep away from strong oxidizers such as nitrates.

Personal protective equipment

Respiratory system : Use appropriate respiratory protective equipment such as dust protective mask, etc.

Hands : Protective gloves, Heat-resistant gloves, etc.
Wear appropriate protective gloves.

Eyes and face : Eye protection, Eye protector with side plates, Goggle-type
Wear appropriate eye and face protection such as face shield.

Skin and body : Wear appropriate protective clothing such as protective garment, protective boots, and protective apron.

9. Physical and Chemical Properties and Safety Characteristics

Appearance, etc.	: Granulated powder
Color	: Black
Odor	: Odorless
Melting point	: 3550 °C
Boiling point	: 4200 °C (sublimation)
Flammability	: No data available
Explosive range	: No-data available
Flashing point	: No data available
Auto-ignition temperature	: Over 500 °C
pH	: Not applicable
Kinematic viscosity	: No data available
Solubility	: Insoluble in water
<i>n</i> -Octanol/water partition coefficient (log Po/w)	: No data available
Vapor pressure	: Negligible (at 20 °C)
Density and/or relative density	: 1.8 to 2.1

Relative vapor density (Air=1) : No data available
Particle characteristics : No data available

10. Stability and Reactivity

Reactivity : Reacts with strong oxidizers, causing fire and explosion hazard.
Stability : Stable under recommended storage conditions
Possibility of hazardous reactions : React violently with oxidizer.
May explode if mixed with dust and air
Conditions to avoid : Keep away from heat, sparks, and open flames.
Prevent dust from diffusing into air.
Incompatible materials : Strong oxidizers such as chlorate and nitrate.
Hazardous decomposition products : Emit hazardous gases (carbon monoxide and carbon dioxide) in case of fire.

11. Toxicological Information

Acute toxicity

Oral : No classification based on the following data:
Rat: LD₅₀ value > 8,000 mg/kg and > 10,000 mg/kg (2 cases)
(SIDS (2007))

Dermal : Not classifiable due to insufficient data
Inhalation (gas) : Not applicable
Inhalation: (vapor) : Not applicable
Inhalation (dust/mist) : Not classifiable due to insufficient data
Skin corrosion/irritation : No classification due to insufficient data
Serious eye damage/eye irritation : Not classifiable due to lack of data
Respiratory or skin sensitization : Not classifiable due to lack of data
Germ cell mutagenicity : Not classifiable
Carcinogenicity : ACGIH Carcinogen
A3: Carcinogenic to animals (Unknown relevance to humans)
IARC Carcinogenicity Evaluation Monogram
2B: Possibly carcinogenic to humans
Japan Society for Occupational Health-Carcinogens
2B: Possibly carcinogenic to humans

Reproductive toxicity : Not classifiable due to insufficient data
Specific target organ toxicity (single exposure) : Not classifiable due to insufficient data
Specific target organ toxicity (repeated exposure) : Classified as Category 1 (Respiratory system) based on the following data:
Significant pulmonary tissue changes were observed in laboratory animals within the dose range of Category 1 though inhalation exposure caused only slight drop of respiratory

function in humans.

Aspiration hazard : Not classifiable due to insufficient data

This reference material is stable under normal conditions, and there is no risk of noxious additive ingredients elusion. In case of handling this reference material under special conditions, such as high temperatures, however, it is recommended to take sufficient safety precautions.

12. Ecological Information

Ecotoxicity : No classification
 Persistence and degradability : No data available
 Bioaccumulative potential : No data available
 Mobility in soil : No data available
 Harmful effects on ozone layer : No data available

13. Disposal Considerations

Residual wastes : Dispose of this reference material in accordance with applicable legislation and local government ordinance.
 When the above-mentioned treatments are not possible, entrust disposal of residual waste to a professional waste disposal company licensed by prefectural governor.
 Contaminated container and package : Disposal of the empty container should be after the complete removal of the content.

14. Transport Information

International Regulations

UN number : Not applicable
 Shipping name : —
 UN classification : —
 Packing group : —
 Marine pollutant : Not applicable

Japanese domestic regulations

Transport by road/rail : Comply with Fire Service Act and Road Act
 Transport by sea : Comply with Ship Safety Act
 Transport by air : Comply with Civil Aeronautics Act

15. Regulatory Information

Poisonous and Deleterious : Not applicable

Substances

Control Act

Pneumoconiosis Law : Article 2, Enforcement Order: Article 2, Appendix “Work in Dusty Environment”

Industrial Safety and Health Act : Article 57 (Enforcement Order: Article 18, Appendix 9) Dangerous or harmful substance whose name, etc. must be labeled
Article 57-2 (Enforcement Order: Article 18-2, Appendix 9) Dangerous or harmful substance whose name, etc. must be notified, No.130
Article 57-3 Dangerous or harmful substance which requires risk assessment

Act on Port Regulations : Article 21-2, Other dangerous goods (flammable goods)

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16. Other Information

Others

The information in this document is not intended to be exhaustive and is based on currently available information and data. The measures given in this document are applicable only to normal handling conditions. When handling this reference material under special conditions etc., it is recommended to take safety measures appropriate to each specific application and context of use. This document is intended to provide information and not intended to guarantee anything in handling this reference material.
