

Safety Data Sheet



1. Identification of the Substance/Mixture and the Supplier

Supplier : National Institute of Advanced Industrial Science and Technology (AIST)

Address : 1-3-1, Kasumigaseki, Chiyoda, Tokyo, Japan

Office in Charge : Reference Materials Office, Center for Quality Management of Metrology, National Metrology Institute of Japan (NMIJ)

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Prepared on : February 5, 2013
Revised on : March 31, 2017
ID Number : 7307001

Identity of Substance/Mixture : Certified Reference Material NMIJ CRM 7307-a
Polycyclic Aromatic Hydrocarbons in Fresh Water Lake Sediment

Recommended Use of the Chemical and Restriction on Use : This certified reference material can be used for quality control and validation of analysis equipment and analytical method in analysis of polycyclic aromatic hydrocarbons (PHA) in fresh water lake sediments or the related materials. Do not use this reference material for other purposes than testing/research.

2. Hazards Identification

GHS classification : Not applicable

GHS label element : -

Signal word : -

Hazards Statement : -

Other hazard and toxicity information : Contains carcinogen, avoid exposure

Precautionary statement : [Preventive measures]
Read and understand the safety precautions fully before handling.
Avoid discharging to the environment.
If necessary, use suitable personal protective equipment
Avoid being exposed entirely.
[First-Aid Measure]
If swallowed : When feeling unwell, seek medical advice,
If in eyes : Wash with plenty of water for several minutes
If on skin : Wash with soap and a large amount of water
If exposed or possible exposure : Seek medical advice
Collect and recover the leaked material.
[Storage]

Store in a clean place protected from light at the temperature of about 5 °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 covered by the GHS.

3. Composition/Information on Ingredients

Single/mixture product : Mixtuer
 Chemical name : Fresh water lake sediment
 Synonym : -
 Chemical formula : -
 Molecular weight : -
 CAS number : -
 Content : -
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
 Gazetted List in Japan Their Manufacture, etc. : -
 Industrial Safety and Health Act : -

This CRM contains minor components shown below;

Ingredient 1

Chemical name : Fluorene
 Synonym : -
 Chemical formula : C₁₃H₁₀
 Molecular weight : 166.21
 CAS number : 86-73-7
 Content : 5.98µg/kg
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
 Gazetted List in Japan Their Manufacture, etc. : (4)-643
 Industrial Safety and Health Act : Published

Ingredient 2

Chemical name : Phenanthrene
 Synonym : -
 Chemical formula : C₁₄H₁₀
 Molecular weight : 178.23
 CAS number : 85-01-8
 Content : 24.5µg/kg
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
 Gazetted List in Japan Their Manufacture, etc. : (4)-635
 Industrial Safety and Health Act : Published

Ingredient 3

Chemical name : Anthracene
 Synonym : -
 Chemical formula : C₁₄H₁₀
 Molecular weight : 178.23
 CAS number : 120-12-7
 Content : 3.59µg/kg
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
 Gazetted List in Japan Their Manufacture, etc. : (4)-683
 Industrial Safety and Health Act : Published

Ingredient 4

Chemical name : Fluoranthene
 Synonym : -
 Chemical formula : C₁₆H₁₀
 Molecular weight : 202.25
 CAS number : 206-44-0
 Content : 25.1µg/kg
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
 Gazetted List in Japan Their Manufacture, etc. : (4)-2
 Industrial Safety and Health Act : Published

Ingredient 5

Chemical name : Pyrene
 Synonym : -
 Chemical formula : C₁₆H₁₀
 Molecular weight : 202.25
 CAS number : 129-00-0
 Content : 22.2µg/kg
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
 Gazetted List in Japan Their Manufacture, etc. : (4)-782
 Industrial Safety and Health Act : Published

Ingredient 6

Chemical name : Benzo[*c*]phenanthrene
 Synonym : -
 Chemical formula : C₁₈H₁₂
 Molecular weight : 228.29
 CAS number : 195-19-7
 Content : 3.21µg/kg
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
 Gazetted List in Japan Their Manufacture, etc. : -
 Industrial Safety and Health Act : -

Ingredient 7

Chemical name : Benz[*a*]anthracene

Synonym : -
 Chemical formula : C₁₈H₁₂
 Molecular weight : 228.29
 CAS number : 56-55-3
 Content : 7.15µg/kg
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
 Gazetted List in Japan Their Manufacture, etc. : -
 Industrial Safety and Health Act : -

Ingredient 8

Chemical name : Chrysene
 Synonym : -
 Chemical formula : C₁₈H₁₂
 Molecular weight : 228.29
 CAS number : 218-01-9
 Content : 8.39µg/kg
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
 Gazetted List in Japan Their Manufacture, etc. : -
 Industrial Safety and Health Act : -

Ingredient 9

Chemical name : Benzo[*b*]fluoranthene
 Synonym : -
 Chemical formula : C₂₀H₁₂
 Molecular weight : 252.31
 CAS number : 205-99-2
 Content : 24.9µg/kg
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
 Gazetted List in Japan Their Manufacture, etc. : -
 Industrial Safety and Health Act : -

Ingredient 10

Chemical name : Benzo[*j*]fluoranthene
 Synonym : -
 Chemical formula : C₂₀H₁₂
 Molecular weight : 252.31
 CAS number : 205-82-3
 Content : 5.28µg/kg
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
 Gazetted List in Japan Their Manufacture, etc. : -
 Industrial Safety and Health Act : -

Ingredient 11

Chemical name : Benzo[*k*]fluoranthene
 Synonym : -
 Chemical formula : C₂₀H₁₂

Molecular weight : 252.31
CAS number : 207-08-9
Content : 7.0µg/kg
Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
Gazetted List in Japan Their Manufacture, etc. : -
Industrial Safety and Health Act : -

Ingredient 12

Chemical name : Benzo[*a*]fluoranthene
Synonym : -
Chemical formula : C₂₀H₁₂
Molecular weight : 252.31
CAS number : 203-33-8
Content : 1.56µg/kg
Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
Gazetted List in Japan Their Manufacture, etc. : -
Industrial Safety and Health Act : -

Ingredient 13

Chemical name : Benzo[*e*]pyrene
Synonym : -
Chemical formula : C₂₀H₁₂
Molecular weight : 252.31
CAS number : 192-97-2
Content : 9.7µg/kg
Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
Gazetted List in Japan Their Manufacture, etc. : -
Industrial Safety and Health Act : -

Ingredient 14

Chemical name : Benzo[*a*]pyrene
Synonym : -
Chemical formula : C₂₀H₁₂
Molecular weight : 252.31
CAS number : 50-32-8
Content : 4.57µg/kg
Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
Gazetted List in Japan Their Manufacture, etc. : -
Industrial Safety and Health Act : -

Ingredient 15

Chemical name : Perylene
Synonym : -
Chemical formula : C₂₀H₁₂
Molecular weight : 252.31
CAS number : 198-55-0

Content : $2.08 \times 10^3 \mu\text{g/kg}$
Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
Gazetted List in Japan Their Manufacture, etc. : -
Industrial Safety and Health Act : -

Ingredient 16

Chemical name : Indeno[1,2,3-*cd*]pyrene
Synonym : -
Chemical formula : $\text{C}_{22}\text{H}_{12}$
Molecular weight : 276.33
CAS number : 193-39-5
Content : $5.6 \mu\text{g/kg}$
Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
Gazetted List in Japan Their Manufacture, etc. : -
Industrial Safety and Health Act : -

Ingredient 17

Chemical name : Benzo[*ghi*]perylene
Synonym : -
Chemical formula : $\text{C}_{22}\text{H}_{12}$
Molecular weight : 276.33
CAS number : 191-24-2
Content : $6.76 \mu\text{g/kg}$
Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
Gazetted List in Japan Their Manufacture, etc. : -
Industrial Safety and Health Act : -

Ingredient 18

Chemical name : Dibenz[*a,h*]anthracene
Synonym : -
Chemical formula : $\text{C}_{22}\text{H}_{14}$
Molecular weight : 278.34
CAS number : 53-70-3
Content : $0.92 \mu\text{g/kg}$
Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
Gazetted List in Japan Their Manufacture, etc. : -
Industrial Safety and Health Act : -

Ingredient 19

Chemical name : Naphthalene
Synonym : -
Chemical formula : C_{10}H_8
Molecular weight : 128.17
CAS number : 91-20-3
Content : $34.4 \mu\text{g/kg}$
Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of

Gazetted List in Japan Their Manufacture, etc. : (4)-311
Industrial Safety and Health Act : Published

Ingredient 20

Chemical name : Triphenylene
Synonym : -
Chemical formula : C₁₈H₁₂
Molecular weight : 228.29
CAS number : 217-59-4
Content : 6.74µg/kg
Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
Gazetted List in Japan Their Manufacture, etc. : -
Industrial Safety and Health Act : -

4. First-aid Measures

If in eyes

1. Rinse well with clean water.
2. Seek medical advice

If on skin

1. Rinse well with clean water.
2. Take off the contaminated clothing, shoes, etc. Seek medical advice.

If inhaled

1. Move to get a fresh air, keep warm and rest
2. Seek medical advice

If swallowed

1. Wash the mouth well with water.
2. Seek medical advice

5. Fire-fighting Measures

Extinguishing media : Extinguishing agents appropriate to the surrounding area

Specific hazards at the : Nonflammable
time of fire

Specific extinguishing : Remove any ignition source from the seat of fire and extinguish
measures using appropriate extinguishing agent. Transfer the movable
container to a safe place promptly. If impossible to transfer, use
water spray to cool the periphery.

Protecting fire-fighting : Fire resistant clothing, heat resistant clothing, protective
personnel clothing, respiratory protective device, oxygen closed circuit
self-contained breathing apparatus, rubber gloves, rubber boots

6. Accidental Release Measures

By preventing the dust and particulate from scattering, collect the leaked/spilled material
as much as possible in an empty container and then wash away with water.

7. Handling and Storage

Handling

- Avoid contact with eyes, skin, clothing
- Avoid inhaling dust and particulate
- Avoid long-term or repeated exposure
- No eating, drinking or smoking when handling.
- Wash well the parts that may have been exposed to the material when handling
- Avoid contact with open flame, spark or high temperature material. Do not heat.
- Avoid contact or mix with oxidizers

[Storage]

- Store at a room temperature. Protect from light, avoid high temperature or humidity.
- Keep the container airtight at all times.

8. Exposure Controls/Personal Protection

Precaution for safety management : Not established.

- Keep away from fire.

Administrative level : Not established

Occupational exposure level

- ACGIH TLV-TWA : Not established
- Japan Society for Occupational Health : Not established

Recommended Reference Value

Ventilation, exhaust

- Local ventilation system or general ventilation system (when handling large amount, protect from dust and particulate generated)

Protective equipment

- Respiratory protective device
- Safety goggle

Hygiene measure

- Treat in accordance with rules on Industrial hygiene and Industrial safety.

9. Physical and Chemical Properties

- Appearance, etc. : Powder
- Color : No data
- Odor : No data
- pH : No data
- Melting point : No data
- Boiling point : No data
- Flashing point : No data
- Explosive range : No data
- Vapor pressure : No data
- Relative vapor density(Air=1) : No data
- Specific gravity or bulk : No data

- specific gravity
- Solubility : Insoluble in water
 - *n*-Octanol/water partition coefficient (Log Po/w) : No data
 - Auto-ignition temperature : No data

10. Stability and Reactivity

Stability

- Stable under normal condition

Reactivity

- No data available

Conditions to avoid

- No data available

Hazardous decomposition products

- No data available

11. Toxicological Information

Skin corrosivity/irritation : Possible irritant

Severe damage to eyes/ eye : Possible irritant

irritation

Respiratory sensitization : When a large amount of dust and particulate is absorbed and accumulated at the respiratory organ, it may cause adverse effects on the respiratory system.

12. Ecological Information

Degradability, concentration

- No data available

Bioaccumulation

- No data available

Ecotoxicity

- No data available

13. Disposal Considerations

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

14. Transport Information

UN Number : Not applicable

UN Classification : Not applicable

Shipping Name : -

Packing Group : -

ICAO/IATA : Not applicable

Marine Pollutant : Not applicable

Precautions : Avoid dropping, falling, etc. and transport with caution.

15. Regulatory Information

- No applicable laws and regulations
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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.
