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)
Person in Charge	:	Person in Charge of Certified Reference Materials
Telephone No.	:	+81-29-861-4059 Fax No. : +81-29-861-4009
Emergency Contact	:	Same as above
		Prepared on : December 10, 2015
		Revised on : August 31, 2022
		ID Number : 7407001
Identity of Substance/Mixture	:	Certified reference material: NMIJ CRM 7407-a Organic Contaminants in Human Serum
Recommended Use of the Chemical and Restriction on Use	:	This reference material is intended for use in accuracy control of analysis and validation for analytical techniques during the determination of PCBs in human serum. Do not use this reference material for other purposes than testing/research. This CRM is a reference material (specified in the Japanese Industrial Standard (JIS) Q 0030).

2. Hazards Identification

GHS Classification	:	No classification
GHS Label Element	:	−
Signal Word	:	−
Hazards Statement	:	−
Other Hazards Statement	:	This reference material is made from commercially available human serum. Although it is found negative in the HBs antigen test, HCV antibody test and HIC antibody test, its infectivity cannot be completely denied. Handle this reference material, therefore, as cautiously as handling of specimens, e.g. use protective gloves. This CRM is for laboratory use only and not for in vivo use.
Precautionary Statement	:	[Precaution] Wear protective mask, protective gloves, eye protection, etc., when handling this reference material, so as not to allow it to enter mouth or adhere to skin. [First-aid Action] If swallowed: Wash mouth well with clean water. If in eyes: Rinse with running water for several minutes. Get medical advice/attention, if necessary. If on skin: Wash with plenty of soap and water. Then Remove/Take

off all contaminated clothing and adhered materials.
If skin irritation or rash occurs: Get medical advice/attention.
［Storage］
This CRM should be kept about −20 °C under dark conditions.
Store in a locked area.
［Disposal］
Dispose of this reference material in accordance with applicable legislation and local government ordinance. For discard, distinguish medical waste and industrial waste.

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

3. Composition/Information on Ingredients

Substance/Mixture	:	Single substance
Chemical name	:	Human serum
Synonym	:	-
Chemical formula	:	-
Molecular weight	:	-
CAS number	:	-
Content	:	>99 %
Reference Number in Gazetted List in Japan	:	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : - Industrial Safety and Health Act : -

This material contains components shown below;

Ingredient 1		PCB118
Synonym	:	2,3',4,4',5-Pentachlorobiphenyl
Content	:	Ca. 30 ng/kg
Chemical formula	:	$C_{12}H_5Cl_5$
Molecular weight	:	326.431
Reference Number in Gazetted List in Japan	:	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : - Industrial Safety and Health Act : -
CAS Number	:	31508-00-6

Ingredient 2	:	PCB138
Synonym	:	2,2',3,4,4',5'-Hexachlorobiphenyl
Content	:	Ca. 60 ng/kg
Chemical formula	:	$C_{12}H_4Cl_6$
Molecular weight	:	360.876
Reference Number in Gazetted List in Japan	:	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : - Industrial Safety and Health Act : -

CAS Number	:	35065-28-2
Ingredient 3	:	PCB153
Synonym	:	2,2',4,4',5,5'-Hexachlorobiphenyl
Content	:	Ca. 130 ng/kg
Chemical formula	:	$C_{12}H_4Cl_6$
Molecular weight	:	360.876
Reference Number in Gazetted List in Japan	:	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : - Industrial Safety and Health Act : -
CAS Number	:	35065-27-1
Ingredient 4	:	PCB194
Synonym	:	2,2',3,3',4,4',5,5'-Octa-chloro biphenyl
Content	:	Ca. 10 ng/kg
Chemical formula	:	$C_{12}H_2Cl_8$
Molecular weight	:	429.766
Reference Number in Gazetted List in Japan	:	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : - Industrial Safety and Health Act : -
CAS Number	:	35694-08-7
Ingredient 5	:	PCB180
Synonym	:	2,2',3,4,4',5,5'-Hepta-chloro biphenyl
Content	:	Ca. 3.8 mg/g
Chemical formula	:	$C_{12}H_3Cl_7$
Molecular weight	:	395.321
Reference Number in Gazetted List in Japan	:	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : - Industrial Safety and Health Act : -
CAS Number	:	35065-29-3
Hazardous Ingredient	:	PCB118, PCB138, PCB153, PCB194, PCB180

4. First-aid Measures

If in eyes	:	Rinse away thoroughly with clean water. Get medical advice/attention.
If on skin	:	Rinse away thoroughly with clean water. Take off/Remove contaminated clothing, shoes, etc. Get medical advice/attention.
If inhaled	:	Remove victim to fresh air and keep at rest and warm. Get medical advice/attention.
If swallowed	:	Rinse mouth thoroughly with water. Get medical advice/attention when feeling unwell.
Expected Acute and Delayed Symptom	:	—

Most Critical Characteristic and Symptom	:	—
Protection of First-Aid Responder	:	Wear appropriate protective equipment to avoid any exposure.

5.Fire-fighting Measures

Extinguishing Media	:	Use a fire extinguishing agent suitable for surrounding fire.
Fire-Specific Hazards	:	Nothing special
Specific Fire-Fighting Method	:	Eliminate ignition sources at the origin of a fire and put out fire by using extinguishing media. Remove movable containers promptly to a safe place. In the case of immovable containers, cool their surroundings with sprayed water.
Protection of Fire-Fighters	:	Carry out fire-fighting from the windward in order to avoid breathing hazardous gas. Use personal protective equipment such as fireproof clothing, heat-resistant clothing, protective clothing, compressed air open-circuit self-contained breathing apparatus, compressed oxygen closed-circuit self-contained breathing apparatus, rubber gloves and rubber boots.

6. Accidental Release Measures

Personal Precaution Personal Protective Equipment	:	Use appropriate personal protective equipment to avoid contact with skin, eyes and clothing.
Emergency Procedures	:	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 spillage 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 spillage in empty containers by getting it adsorbed to wiping cloth, rag or earth and sand, etc. Rinse away the remains with plenty of water.
Prevention of Secondary Disaster	:	Mark the restricted area with rope etc. to keep out unauthorized people. Carry out the clean-up operation from the windward and make people on the leeward side evacuate.

7. Handling and Storage

Handling

Engineering Precautions	:	Do not put this reference material into eyes, administer it orally, or inject it. Wear protective mask, protective gloves, eye protection, etc., when handling this reference material, so as not to get in mouth or on skin.
Local and General Ventilation	:	When vapor or mist is generated, seal the source, and provide local exhaust ventilation or central ventilation.

Precautions for Safe Handling	:	Avoid rough handling such as turning over, dropping, giving a shock to or dragging containers. Prevent spill, overflow and scattering, and avoid vapor generation. Keep container tightly closed after using this reference material. Wash hands, face etc. thoroughly and gargle after handling this reference material. Restrict drinking, eating and smoking to a designated area. 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 personal protective equipment to avoid inhalation and contact with eyes, skin and clothing. Use local ventilation system in indoor handling areas.

Storage

Appropriate Storage Conditions	:	This CRM should be kept about −20 °C under dark conditions. Store in a locked area.
Safe Container Packaging Material	:	Plastic

※ Please refer to the certificate regarding details of appropriate storage conditions and precautions for use as reference material.

8. Exposure Controls/Personal Protection

Threshold Limit Value

0.01 mg/m^3 (PCB)

Permissible Concentration (PCB)

・ACGIH TLV-TWA	:	Not specified
・Value recommended by Japan Society for Occupational Health	:	0.01 mg/m^3
・OSHA PEL TWA	:	Not specified

Engineering Controls

Ventilation/Exhaust	:	Local ventilation system or General ventilation system
Safety Control/ Gas Detection	:	−
Storage Precaution	:	Tightly closed.

Personal Protective Equipment (PPE)

Respiratory System	:	Protective mask
Hands	:	Protective gloves
Eyes	:	Protective glass
Skin and Body	:	Protective clothing

Hygiene Controls

Handle this reference material in accordance with industrial health and safety standards.

9. Physical and Chemical Properties

・Appearance, etc.	:	Liquid
・Color	:	Pale yellow
・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 specific gravity	:	No data
・Solubility	:	Soluble in water.
・*n*-Octanol/water partition coefficient (Log Po/w)	:	No data
・Auto-ignition temperature	:	No data

10. Stability and Reactivity

◇Chemical Stability
・Stable under normal storage conditions
◇Reactivity
・No data
◇Conditions to Avoid
・Sunlight, Heat
◇Hazardous Decomposition Products
・No information available

11. Toxicological Information

Although this CRM does not include hazardous materials exceeding the permissible concentration, take care not to adhere to the skin or enter in the mouth to ensure safety handling.

12. Ecological Information

Persistence and Degradability
・No data available
Bioaccumulative Potential
・No data available
Ecotoxicity
・No data available

13. Disposal Considerations

Residual Waste : Dispose of this CRM in accordance with applicable legislation and local government ordinance. Entrust disposal of this CRM to a

professional waste disposal company licensed by the prefectural governor.

Contaminated Container and Package	:	Dispose of this CRM in accordance with applicable legislation and local government ordinance. Entrust disposal of this CRM to a professional waste disposal company licensed by the prefectural governor.

14. Transport Information

UN Number	:	Not applicable
UN Classification	:	—
Shipping Name	:	—
Packing Group	:	—
ICAO/IATA	:	Not applicable
Marine Pollutant	:	Not applicable
Precautions	:	Transport this reference material carefully while keeping it away from direct sunlight and fire and preventing accidental release due to falling, overturning, etc.

15. Regulatory Information

◇Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

・Class 1 Specified Chemical Substances、(PCBs, No. 1)

◇This SDS is originally prepared for the use of the material in Japan, thus the stated laws and regulations are stipulated and carried out in Japan. The use of the material in other countries should be referred to and by application of the relevant laws and regulations of the country in which the material will be used.

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.