

# Safety Data Sheet

## 1. Identification of the Substance/Mixture and of 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  
 Person in Charge : Certified Reference Material Staff  
 Telephone No. : +81-29-861-4059 Fax No. : +81-29-861-4009  
 Emergency Contact : Same as above

Prepared on : June 30, 2009

Revised on : April 25, 2018

ID Number : 8109001

Identity of Substance/Mixture : Certified reference material: NMIJ CRM 8109-a  
 Polybrominated Diphenyl Ethers in Poly (Vinyl Chloride) Resin  
 Recommended Use of the Chemical and Restriction on Use : This reference material can be used to control the precision of analysis or to confirm the validity of analytical methods or instruments during the analysis of Polybrominated Diphenyl Ethers in Poly (Vinyl Chloride) Resin or similar polymers. Do not use this reference material for other purposes than testing/research.

## 2. Hazards Identification

GHS Classification : Acute toxicity (Oral) : Hazard Category 4  
 Acute toxicity (Dermal) : Hazard Category 5  
 Serious eye damage/Eye irritation : Hazard Category 2B

GHS Label Element:



Signal Word : Warning  
 Hazards Statement: Harmful if swallowed  
 May be harmful in contact with skin  
 Eye irritation  
 Other hazard and toxicity : Decabrominated diphenyl ether (DBDE) is contained. (Class 1 Specified Chemical Substances No.33)  
 Precautionary Statement : [Precaution]  
 Use protective gloves, eye protector and transparent face shield.  
 Do not drink, eat or smoke while handling this reference material.  
 Wash hands after handling this reference material.  
 [Action]  
 Ingestion: Flush mouth thoroughly with water. Seek medical attention, when swallowing a large amount or when feeling sick.  
 Eye contact: Irrigate eyes carefully with water for a few minutes. Then take out contact lenses if it is possible to do so easily. Keep

irrigating eyes after taking out contact lenses. Seek medical attention if eye irritation is prolonged.  
Skin contact: Flush exposed area with soap water or water. Seek medical attention if symptoms appear.

[Storage]

Store this reference material in a light-shielded clean environment at about 5 °C. Keep it hermetically sealed. Keep it in a horizontal position, being protected against stress.

Store in a locked area.

[Disposal]

This CRM contains the class I specified chemicals, therefore handle this CRM in accordance with Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. and Wastes Disposal and Public Cleansing Act.

Hazards not mentioned above are either not classifiable or not applicable.

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### 3. Composition/Information on Ingredients

Substance/Mixture : Mixture

Ingredient 1

Chemical name : Poly vinyl chloride  
 Synonym : PVC  
 Chemical formula :  $(C_2H_3Cl)_x$   
 Molecular weight : -  
 CAS number : 9002-86-2  
 Content : About 75 %  
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation  
 Gazetted List in Japan of Their Manufacture, etc. : (6)-66  
 Industrial Safety and Health Act : Published

Ingredient 2

Chemical name : Diisononyl phthalate  
 Synonym : -  
 Chemical formula :  $C_6H_4(COOC_9H_{19})_2$   
 Molecular weight : 418.62  
 CAS number : 28553-12-0  
 Content : About 20 %  
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation  
 Gazetted List in Japan of Their Manufacture, etc. : (3)-1307  
 Industrial Safety and Health Act : Published

Ingredient 3

Chemical name : Epoxidized soybean oil  
 Synonym : -  
 Chemical formula : -

Molecular weight : -  
 CAS number : 8013-07-8  
 Content : About 2.3 %  
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation  
 Gazetted List in Japan of Their Manufacture, etc. : -  
 Industrial Safety and Health Act : -

#### Ingredient 4

Chemical name : Zinc stearate  
 Synonym : -  
 Chemical formula :  $C_{36}H_{70}O_4Zn$   
 Molecular weight : 316.16  
 CAS number : 557-05-1  
 Content : About 0.7 %  
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation  
 Gazetted List in Japan of Their Manufacture, etc. : (2)-615  
 Industrial Safety and Health Act : Published

#### Ingredient 5

Chemical name : Decabrominated diphenyl ether (DBDE)  
 Synonym : Deca bromo diphenyl ether  
 Chemical formula :  $C_{12}Br_{10}O$   
 Molecular weight : 959.17  
 CAS number : 1163-19-5  
 Content : 0.033 %  
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation  
 Gazetted List in Japan of Their Manufacture, etc. : (3)-2846  
 Industrial Safety and Health Act : Published

## 4. First-aid Measures

### ◇ Eye Contact

Irrigate eyes carefully with water for a few minutes.  
 Then take out contact lenses if it is possible to do so easily.  
 Keep irrigating eyes after taking out contact lenses.  
 Seek medical attention if eye irritation is prolonged.

### ◇ Skin Contact

Flush exposed area with soap water or water.  
 Seek medical attention if symptoms appear.

### ◇ Ingestion

Flush mouth thoroughly with water.  
 Seek medical attention, when swallowing a large amount or when feeling sick.

### ◇ Measures to be taken to protect the person applying first aid

Use personal protective equipment.

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## 5. Fire-fighting Measures

Extinguishing Media	: Water sprinkling, Dry chemical, Foam
Fire-Specific Hazards	: This reference material emits hazardous gases (HCl, CO, CO <sub>2</sub> ) when being combusted.
Specific Fire-Fighting Method	: -
Protection of Fire-Fighters	: Carry out fire-fighting from the windward. Use appropriate personal protective equipment such as fireproof clothing and air respirator.

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## 6. Accidental Release Measures

- Prevent this reference material from flowing into drain sewers and public waterways.

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## 7. Handling and Storage

### Handling

- Use eye protector/ transparent face shield.
- Avoid eye contact and skin contact.
- Do not drink, eat or smoke when handling this reference material.
- Wash hands thoroughly after handling this reference material.
- Keep this reference material away from fire.
- It is preferable that relevant equipment is grounded for static electricity protection.
- Do not use this reference material for other purposes than testing.

### Storage

- Store this reference material in a light-shielded clean environment at about 5 °C.
- Lock and store strictly.

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## 8. Exposure Controls/Personal Protection

### Cut-Off Value/Concentration Limit

Not specified

### Engineering Controls

- It is preferable to install local ventilation system if this reference material is used in an indoor environment.
- A facility to irrigate eyes and wash hands must be installed and labeled in the vicinity of a place handling this reference material.

### Personal Protective Equipment (PPE)

- Eye protector
- Polyethylene protective gloves
- Use appropriate PPEs such as air respirator in the event of fire.

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## 9. Physical and Chemical Properties

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|--------------------|---------------------|
| • Appearance, etc. | : Solid, Disk-shape |
| • Color            | : Milky white       |
| • 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 :
  - Poly vinyl chloride  
Insoluble in water  
Insoluble in most organic solvents but soluble in ketones and THFs
  - Diisononyl phthalate  
Solubility in water: 0.006mg/L (20 °C)  
Soluble in organic solvents such as alcohol and ether
- *n*-Octanol/water partition coefficient (Log Po/w) : No data
- Auto-ignition temperature : No data
- Flammability : Not ignited at room temperature

## 10. Stability and Reactivity

- ◇ Stability
  - Stable in normal conditions
- ◇ Reactivity
  - Stable in normal conditions
- ◇ Conditions to avoid
  - Keep this reference material away from fire. Be alert to static electricity.
- ◇ Hazardous Decomposition Products
  - This reference material emits hazardous gases (HCl, CO, CO<sub>2</sub>) when being combusted.

## 11. Toxicological Information

Acute Toxicity (Oral)	<p>Poly vinyl chloride:LD50 (Rat) 2000 mg/kg or more Diisononyl phthalate:LD50 (Rat) 10 g/kg or more</p> <p>Classified in Hazard Category 4 because an ingredient in additives (epoxidized soybean oil; about 2.3 %) features LD50 (rat) 22.5 ml/kg.</p>
Acute Toxicity (Dermal)	<p>Classified in Hazard Category 5 because an ingredient in additives (epoxidized soybean oil; about 2.3 %) features a local effect of “Some people may suffer mild inflammation when their skin contacts with this reference material.”</p>
Serious Eye Damage/Eye Irritation	<p>Diisononyl phthalate Rabbit 0.1 mL/72H very weak irritation</p>

Classified in Hazard Category 2B as this reference material contains about 20 % of diisononyl phthalate (Hazard Category 2B), about 0.7 % of zinc stearate (Hazard Category 2B) and 0.033 % of Decabrominated diphenyl ether (Hazard Category 2B).

The above toxicological information is prepared based on information on raw materials as there is no information available on the mixture. In normal conditions, this reference material is stable and does not have any danger such as elution of hazardous additive ingredients. When handling this reference material under special conditions, e.g. at high temperature, however, it is recommended to take sufficient safety precautions.

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## 12. Ecological Information

Persistence and Degradability

- No data available

Bioaccumulative Potential

- No data available

Ecotoxicity

- No data available

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## 13. Disposal Considerations

- Residual Waste : · This standard substance contains decabrominated diphenyl ether and should be handled appropriately, taking into account that it is Class I Specified Chemical Substance of the Law Concerning the Examination and Regulation of Manufacture, etc.  
· It corresponds to industrial waste and waste plastics of "Waste Disposal and Public Cleaning Law" (Waste Disposal Law). In accordance with the waste disposal method, Disposal of this reference material should be entrusted to a professional waste disposal company licensed by a 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.

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## 14. Transport Information

- UN Number : Not applicable
- UN Classification : -
- Material name : -
- Container grade : -
- ICAO/IATA : Not applicable
- Marine pollutant : Not applicable
- Precautions : Keep this reference material in a light-shielded clean environment at about 5 °C. Keep it in a horizontal position, being protected against stress.  
Prevent this reference material from overturning, falling and

collapsing. Protect the containers from damages.

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## 15. Regulatory Information

◇ Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Chemical Substances Control Law)

· Type 1 Specific Compound (Decabrominated diphenyl ether, No. 33)

◇ Act on grasping emission amount of specified chemical substances to the environment and promoting improvement of management

· Class I designated chemical substances (Decabrominated diphenyl ether, No. 1 - 255)

**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.**

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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. This document is prepared based on JIS Z7253:2012.

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