

Safety Data Sheet



1. Identification of the Substance/Mixture and the Supplier

Supplier : The National Institute of Advanced Industrial Science and Technology
 Address : 1-3-1, Kasumigaseki, Chiyoda, Tokyo, Japan
 Department : Reference Material Office, Center for Quality Management of Metrology, The National Metrology Institute of Japan
 Person in Charge : Certified Reference Material Staff
 Phone Number : 029-861-4059 Fax Number : 029-861-4009
 Emergency Contact : Same as above

Prepared on : March 7, 2007
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 ID Number : 8116001

Identity of Substance/Mixture : Certified reference material: NMIJ CRM 8116-a
 Heavy metals (Cd, Cr, Hg, Pb) in ABS resin - high concentration disk
 Recommended Use of the Chemical and Restriction on Use : This certified reference material (CRM) is intended for use in controlling the precision of analysis or validation of analytical methods or instruments during the X-ray fluorescence analysis of Cd, Cr, Hg and Pb in ABS resin or similar polymers.

2. Hazards Identification

GHS Classification : Carcinogenicity : Hazard Category 1A

Reproductive toxicity : Hazard Category 2

GHS Label Element :



Signal Word : Danger

Other Hazards Statement : Suspected of causing adverse effects on fertility or the unborn child
 Suspected of causing cancer

Precautionary Statement : [Precaution]
 Do not handle until all safety precautions have been read and understood.

Get the instruction manual before use.
 Use personal protective equipment if necessary.
 Toxic by oral ingestion.

[Action]
 When swallowed, drink a large amount of water to induce vomiting. Get medical assistance.

[Storage]
 This CRM should be stored in clean and dry place at room

temperature (15 °C to 35 °C) and shielded from direct light.

This CRM should be stored in locked place.

[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/Component Information

Substance/Mixture : Mixture

Chemical name : Acrylonitrile-butadiene-styrene copolymer

Other name : ABS resin

Chemical or structural formula

Elements below are contained.

- Cadmium oxide (CdO) : Content 90.8 mg/kg (as Cd)
- Lead chromate (PbCrO₄) : Content 912 mg/kg (as Cr), 16 mg/kg (as Pb)
- Mercury sulfide (HgS) : Content 903 mg/kg (as Hg)
- Decabromodiphenylether : Content < 120 mg/kg (C₁₂Br₁₀O)

Official Gazette Reference No. Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : Stem polymer—(6)-720; (6)-134; branch polymer (6)-126; Decabromodiphenylether (3)-2846

CAS No. : Polymer 90003-56-9; Decabromodiphenylether 1163-19-5; Cadmium oxide 1306-19-0; Lead chromate 7758 - 97 - 6; Mercury sulfide 1344 - 48 - 5

TSCA : Assigned

Hazardous substance : Cadmium oxide (CdO), Lead chromate (PbCrO₄)

4. Emergency Measures

◇If in Eyes

1. Rinse cautiously with clean water.
2. Get medical advice/attention when feeling unwell.

◇If on Skin

1. Rinse cautiously with clean water.
2. Remove/Take off contaminated clothing, etc.

◇If Ingested

1. Rinse mouth thoroughly with water.
2. Get medical advice/attention when feeling unwell.

5. Fire-Fighting Measures

Extinguishing Media : Water spray, carbon dioxide, dry chemical powder, Alcohol-resistant, polymer bubble.

- Fire-Specific Hazards : In the case of fire, irritating or toxic gas (CO, NOx or CN) may be generated. Carry out fire-fighting from the windward in order to avoid breathing hazardous gas.
- 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 fire protection clothing, heat-resistant clothing, protective clothing, breathing apparatus, circulating oxygen respirator, rubber gloves, and rubber boots.

6. Accidental Release Measures

- Personal Precaution : Use appropriate personal protective equipment during the operation to avoid contact with skin, eyes, and clothes.
- Personal Protective Equipment and 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. Then neutralize with slaked lime or soda ash, and wash away with a large amount 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

- Avoid direct contact with human body.
- Do not eat, drink, or smoke during handling
- Wash hands, face etc. thoroughly after handling this reference material.
- Obtain the instruction manual before use.

Storage

- Store in the plastic case.
- Store in clean and dry place at room temperature (15 °C to 35 °C) and shielded from direct light.

8. Exposure Control/Personal Protection

Safety management notes

- Not specified

Permissible Concentration (Cadmium oxide)

- ACGIH TLV-TWA (2000) : 0.01 mg/m³ (Total dust/Particulate, as Cd)
: 0.002 mg/m³ (Respirable dust, as Cd)
- Values recommended by Japan Society for Occupational Health (1998) : 0.05 mg/m³ (as Cd)

Society for Occupational Health (1998)

- OSHA PEL TWA : 0.2 mg/m³ (as Cd)

Permissible Concentration (lead chromate)

- ACGIH TLV-TWA (2000) : 0.05 mg/m³ (as Pb)
: 0.012 mg/m³ (as Cr)
- Values recommended by Japan Society for Occupational Health (1998) : 0.1 mg/m³ (as Pb)

Society for Occupational Health (1998)

- : 0.05 mg/m³ (as Cr)

Permissible Concentration (lead chromate) (mercury sulfide)

- ACGIH TLV-TWA (2001) : 0.025mg/m³ (as Hg)
- Values recommended by Japan Society for Occupational Health (2001) : 0.025mg/m³ (as Hg)

Society for Occupational Health (2001)

Permissible Concentration (decabromodiphenylether)

- Not specified

Facility engineering

◇ Storing precaution

- This CRM should be stored in clean and dry place at room temperature (15 °C to 35 °C) and shielded from direct light.

◇ Personal Protective equipment

- Unnecessary in the normal handling.
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9. Physical and Chemical Properties

- Appearance, etc. : Solid(disk)
- Color : Brown
- Odor : No-data
- pH : No-data
- Specific Gravity or Bulk Specific Gravity : 1.034 g/cm³ U=±0.006 (k=2)

Gravity

- Boiling Point : No-data
- Melting Point : Ca. 200 °C
- Flash Point : No-data
- Ignition temperature : No-data
- Explosive Range : No-data
- Solubility : Insoluble in water

10. Stability and Reactivity

◇Stability

- Stable in normal conditions

◇Reactivity

- Thermal decomposition of this material may cause generation of NO_x, CN, etc.

◇Conditions to Avoid

- No data

◇Hazardous Decomposition Products

- Carbon monoxide (CO)

11. Toxicological Information

Acute Toxicity

Oral (Cadmium oxide)

Mouse LD50 : 72 mg/kg · Rat LD50 : 72 mg/kg

Oral (Lead chromate)

Mouse LD50 : >12 g/kg

Oral (Mercury sulfide)

No data

12. Ecological Information

Degradability, concentration

- Not degradable by-microorganisms (Cadmium oxide)。
- Not degradable by-microorganisms, 1~3% (by BOD), concentration ratio (Carp):58~144 (2 mg / l), concentration ratio (Carp): 358~821 (0.2 mg/L) (Decabromodiphenylether)

Bioaccumulative Potential

- In the body of the fish, it is estimated to have no concentration or accumulation property, or it is estimated to have low concentration or accumulation property. Also it was determined not to have high concentration property in fish. (Cadmium oxide)
- In the body of the fish, it is estimated to have no concentration or accumulation property, or it is estimated to have low concentration or accumulation property. Also it was determined not to have high concentration property in fish. (Decabromodiphenylether)

Ecotoxicity

- *Oryzias latipes* LC50/48H >500 mg / l (Decabromodiphenylether)

13. Disposal Considerations

- 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.
 - Dispose of containers after thoroughly removing their contents.

14. Transport Information

UN Number : -

UN Classification : -

Material name : -

Container grade : -

ICAO/IATA : -

Marine pollutant : N/A
Precautions : Avoid direct sunlight and transfer with care not to spill/leak by dropping or falling, etc.

15. Applicable Legislation

- No applicable laws and regulations
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16. Other Information

References

- Complete Substances Data subject to MSDS (Revised 2nd Edition, The Chemical Daily (2007)
- International Chemical Safety Cards (ICSC) Japanese version, The Chemical Daily (1992)
- Chemical Product Safety Management Data Book: Data Center, Chemical Daily (1993)
- Chemical Goods No.14303, The Chemical Daily(2003)
- Companion to the Hazardous Materials Handling (Practical Guide), Japan Association for Safety of Hazardous Materials (2002)

Other

The information in this Safety Data Sheet is not intended to be exhaustive and is based on currently-available information and data. The precautions given in this data sheet are applicable only to normal handling conditions. When handling this reference material under special conditions etc., it is recommended to take safety precautions appropriate to each specific application and context of use. This Safety Data Sheet (SDS) is intended to provide information and not intended to guarantee anything in handling the reference material. This Safety Data Sheet (SDS) is prepared based on JIS Z7253:2012, and presents identical information to Material Safety Data Sheet (MSDS) prepared based on JIS Z7250:2010.
