

Safety Data Sheet

1. Identification of the Substances and the Organization

Organization name : 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
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 Emergency No. : Same as above

Prepared on : June 05, 2006

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Reference No.: 8113001

Identity of Substance/Mixture : Certified Reference Material MNIJ CRM 8113-a Heavy metals (Cd, Cr, Hg, Pb) in ABS resin - high concentration pellet

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 quantitative determination of Cd, Cr, Hg and Pb in ABS resin or similar polymers. Do not use this reference material for other purposes than testing/research.

2. Hazard Identification

GHS classification : Carcinogenicity : Class 1A
 Reproductive toxicity : Class 2

GHS label element :



Signal word : Danger

Hazard and toxicity : May have adverse effects on reproductive function and embryo
 Possible carcinogen

Precautionary statement : [Preventive measures]
 Read and understand the safety precautions fully before handling
 Obtain the handling manual before using
 Use suitable individual protective equipment as necessary.
 Toxic if ingested
 [Response]
 If swallowed, drink a large amount of water to induce vomiting. Seek medical advice.
 Exposed or possibly exposed, seek medical advice.

[Storage]

Avoid sunlight; in a clean place at room temperature.

Store in a locked safety cabinet.

[Disposal]

Outsource to a professional industrial waste disposal contractor licensed by the prefectural governor.

Hazardous and toxic properties not specified in the above are neither the object of the classification nor classifiable

3. Composition/Component Information

Single or compound product : Single product

Chemical name : Acrylonitrile-Butadiene-Styrene copolymer

Other name : ABS resins

Chemical or structural formula

Except, contains the next substances

- Cadmium oxide (CdO) : Content 89.8 mg/kg (as Cd)
- Lead chromate (PbCrO₄) : Content 905 mg/kg (as Cr), 905 mg/kg (as Pb)
- Mercury sulphide (HgS) : Content 915 mg/kg (as Hg)

Official Gazette Public Reference No Act on the Evaluation of Chemical Substance and Regulation of their Manufacturer : Base polymer(6)-720; (6)-134; Ramified polymer (6)-126

CAS number : 9003-56-9

TSCA : Listed

Hazardous component : Cadmium oxide, Lead chromate

4. Emergency Measures

◇ If in eyes

1. Rinse with plenty of clean water.
2. Seek for medical assistance.

◇ If on skin

1. Rinse with plenty of clean water.
2. Take off all the contaminated clothing and shoes, etc. Seek medical advice.

◇ If swallowed

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

5. Fire Fighting Measures

Extinguishing media : Water sprinkling, carbon dioxide, dry chemical powder, alcohol resistance foam, polymer foam

Specific hazards at the time of fire : Combustion gas contains carbon monoxide, NO_x and CN, etc., so extinguish from windward side and avoid inhaling toxic gas if at all possible

Specific extinguishing measures : Remove any source of ignition from the seat of fire and extinguish using appropriate extinguishing agent. Transfer the movable container to a safe

place promptly. If impossible to transfer, use water spray to cool the periphery. Extinguish from windward side and avoid inhaling toxic gas

Protecting fire-fighting personnel : Protective clothing, air breathing apparatus, closed-circuit breathing apparatus, rubber boots.

6. Accidental Release Measures

- Collect the spilled material in an empty container.

7. Handling and Storage

Handling

- Avoid contact with eyes, skin, clothing.
- No eating, drinking, smoking when handling
- Wash hands well after handling
- Obtain the handling manual before using the material

Storage

- Store in a brown bottle, avoid direct sunlight, in a clean place at room temperature.
- Store in a locked safety cabinet.

8. Exposure Control/Personal Protection

Administrative levels

Not established

Occupational exposure limit (Cadmium oxide)

- ACGIH TLV-TWA (2000) : 0.01 mg/m³ (Total dust/Particulate, as Cd)
: 0.002 mg/m³ (Respirable dust, as Cd)
- Japan Society for Occupational Health Recommended Reference Value (1998) : 0.05 mg/m³ (as Cd)
- OSHA PEL TWA : 0.2 mg/m³ (as Cd)

Occupational exposure limit(Lead chromate)

- ACGIH TLV-TWA (2000) : 0.05 mg/m³ (as Pb)
: 0.012 mg/m³(as Cr)
- Japan Society for Occupational Health Recommended Reference Value (1998) : 0.1 mg/m³ (as Pb)
: 0.05 mg/m³ (as Cr)

Occupational exposure limit (Mercury sulphide)

- ACGIH TLV-TWA (2001) : 0.025mg/m³ (as Hg)
- Japan Society for Occupational Health Recommended Reference Value (2001) : 0.025mg/m³ (as Hg)

Facility Engineering

◇Storage precaution

- Avoid direct sunlight, at room temperature

Protective equipment

- Not necessary when handled normally.

9. Physical and Chemical Properties

- Appearance, etc. : Solid (granular)
- Color : Brown
- Odor : No data available

- pH : No data available
- Density : 1.034 g/cm³
- Boiling point : No data available
- Melting point : Approximately 200 °C
- Flashing point : No data available
- Ignition point : No data available
- Explosive rage : No data available
- Solubility : Water insoluble

10. Stability and Reactivity

◇Stability

1. Stable under normal handling, storage

◇Reactivity

- 1 May generate NO_x, CN, etc. by thermal decomposition

◇Conditions to avoid

- No data available

◇Hazardous decomposition products

1. Carbon monoxide

11. Toxicological Information

Acute toxicity	Oral (Cadmium oxide) Mice LD50 : 72 mg/kg Rats LD50 : 72 mg/kg Oral (Lead chromate) Mice LD50 : >12 g/kg Oral (Mercury sulphide) No data
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12. Ecological Information

Degradability, concentration

- Nonbiodegradable(Cadmium oxide).
- Nonbiodegradable 1 % to 3 % (by BOD) carps 58 to 144 folds (2 mg / L) carps 358 to 821 folds (0.2 mg /L) (Decabromodiphenylether)

Bioaccumulation

- Considered as no bioaccumulation, no bioconcentration, or low in bioaccumulation in fish and shell fish. Also considered not high in bioconcentration (Cadmium oxide)
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Ecotoxicity

- Red killifish LC50/48H > 500 mg /L (Decabromodiphenylether)

13. Disposal Consideration

- Outsource to a professional industrial waste disposal contractor licensed by the prefectural governor.

14. Transport Information

UN number : -

UN classification	: -
Material name	: -
Container grade	: -
ICAO/IATA	: -
Marine pollutant	: Not applicable
Precautions	: Avoid sunlight, fire source. Prevent from spilling by dropping, or falling.

15. Applicable Laws and Regulations

None

- © 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

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)
- Data Book of Chemical Products Safety Management, Edited by Data Center, The Chemical Daily (1993)
- 14303 Chemical Products, The Chemical Daily (2003)
- Handbook for Handling Hazardous Materials (Practical Guideline), Japan Association for Safety of Hazardous Materials (2002)

Others

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, and presents identical information to Material Safety Data Sheet (MSDS) prepared based on JIS Z7250:2010.
