

Safety Data Sheet



1. Identification of the Substance/Mixture and the Supplier

Supplier : National Institute of Advanced Industrial Science and Technology (AIST)
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Identity of Substance/Mixture : Certified reference material: NMIJ CRM 8102-a Heavy Metals (Cd, Cr, Pb) in ABS Resin (Low-concentration Pellets)
 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 confirming the validity of analytical methods or instruments during the quantitative determination of Cd, Cr, and Pb in ABS resin or similar polymers. Do not use this reference material for other purposes than testing/research.

2. Hazards Identification

GHS Classification : N/A
 GHS Label Element : N/A
 Signal Word : -
 Other Hazards Statement : -
 Precautionary Statement : [Precaution]
 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.
 [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/Information on Ingredients

Substance/Mixture : Mixture

Ingredient 1

Chemical name : Acrylonitrile-butadiene-styrene copolymer
 Synonym : ABS resin
 Chemical formula : $(C_8H_8.C_4H_6.C_3H_3N)_x$
 Molecular weight : -
 CAS number : 9003-56-9
 Content : >99 %
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation
 Gazetted List in Japan of Their Manufacture, etc. : (6)-176
 Industrial Safety and Health Act : Published

Ingredient 2

Chemical name : Cadmium oxide
 Synonym : CdO
 Chemical formula : CdO
 Molecular weight : 128.41
 CAS number : 1306-19-0
 Content : 10.77 mg/kg (as Cd)
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation
 Gazetted List in Japan of Their Manufacture, etc. : (1)-202
 Industrial Safety and Health Act : Published

Ingredient 3

Chemical name : Lead (II) chromate
 Synonym : Chrome yellow
 Chemical formula : $PbCrO_4$
 Molecular weight : 323.2
 CAS number : 1344-37-2
 Content : 27.87 mg/kg (as Cr), 108.9 mg/kg (as Pb)
 Reference Number in : Act on the Evaluation of Chemical Substances and Regulation
 Gazetted List in Japan of Their Manufacture, etc. : (5)-5161
 Industrial Safety and Health Act : Published

4. First-aid 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.
- ◇Measures to be taken to protect the person applying first aid
 - 1 Use personal protective equipment.

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, NO_x 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

- Technological counter measures : -
- Local ventilation/general ventilation : -
- Precautions for safe 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.

Storage

- Appropriate condition : Store in the amber glass bottle.
Store in clean and dry place at room temperature (15 °C to 35 °C) and shielded from direct light.
- Safe packing material : -

8. Exposure Controls/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)
: 0.2 0.05 mg/m³ (as Cr)

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.

9. Physical and Chemical Properties

- Appearance, etc. : Solid (grain)
- Color : Yellow or pale yellow
- Odor : No data

- pH : No data
- Melting point : Ca. 200 °C
- 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 : 1.033 g/cm³
- 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 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

12. Ecological Information

Degradability, concentration

- Not degradable by-microorganisms (Cadmium oxide)

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)

Ecotoxicity

- No-data

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 | : | Not applicable |
| UN Classification | : | - |
| Material name | : | - |
| Container grade | : | - |
| ICAO/IATA | : | Not applicable |
| Marine pollutant | : | Not applicable |
| Precautions | : | Avoid direct sunlight and transfer with care not to spill/leak by dropping or falling, etc. |

15. Regulatory Information

- No applicable laws and regulations

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

Other

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.