

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 8103-a
 Heavy metals (Cd, Cr, Pb) in ABS resin - high concentration pellet
 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/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 : Over 99 %

Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
Gazetted List in Japan 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 : 106.9 mg/kg (as Cd)

Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of
Gazetted List in Japan 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 : 269.5 mg/kg (as Cr), 1084 mg/kg (as Pb)

Reference Number in : Act on the Evaluation of Chemical Substances and Regulation of

Gazetted List in Japan Their Manufacture, etc. : (5)-5161
Industrial Safety and Health Act : Published

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

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 : Eliminate ignition sources at the origin of a fire and put out fire
Method 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 : Ventilate the affected areas thoroughly, if it is in an indoor
Equipment and environment, until the clean-up operation is completed. Use
Emergency appropriate personal protective equipment during the operation to
Procedures avoid skin contact of splash etc. and inhalation of dust and gas.

Environmental : Take precautions to prevent spillage from draining into rivers etc.

Precautions	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 amber glass bottle.
- Store in clean and dry place at room temperature (15 °C to 35 °C) and shielded from direct light.

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 : 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 : 0.1 mg/m³ (as Pb)

Society for Occupational Health (1998)

- : 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 at Rat LD50: 72 mg/kg
	Oral (Lead chromate)
	Mouse LD50: >12 g/kg
Carcinogenicity	Lead chromate is included at about 0.17 %(category 1A).
Reproductive Toxicity	Lead chromate is included at about 0.17 %(category 2).

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

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.
