

Safety Data Sheet



1. Identification of the Substance/Mixture and the Supplier


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Identity of Substance/Mixture : Certified reference material: NMIJ CRM 1020-a High Nickel Alloy for EPMA
 Recommended Use of the Chemical and Restriction on Use : This certified reference material (CRM) is intended to use in calibrating the concentration of elements during the electron probe micro analyzer (EPMA) analysis of Cr, Ni and Fe in high nickel alloys. Do not use this reference material for other purposes than testing/research.
 This CRM is a reference material (specified in the Japanese Industrial Standard (JIS) Q 0030).

2. Hazards Identification

GHS Classification : Serious eye damage/ Eye irritation : Hazard Category 2B
 Respiratory organ sensitization : Hazard Category 1
 Skin Sensitization : Hazard Category 1
 Carcinogenicity : Hazard Category 2
 Germ cell mutagenicity : Hazard Category 2
 Specific Target Organ Toxicity/Systemic Toxicity (Single Exposure) : Hazard Category 1 (Respiratory organ, kidney)
 Hazard Category 2 (Systemic Toxicity)
 Hazard Category 3 (respiratory tract irritation)
 Specific Target Organ Toxicity/Systemic Toxicity (Repeated Exposure) : Hazard Category 1 (Respiratory organ)
 Water environment : Hazard Category 4

		toxicity (Prolonged)
GHS label element	:	
Signal Word	:	Danger
Other Hazards	:	Eye irritation.
Statement		<p>May cause allergy, asthma or breathing difficulty if inhaled.</p> <p>May cause an allergic skin reaction.</p> <p>May cause cancer.</p> <p>Suspect of causing genetic defects.</p> <p>Causes damage to organ (respiratory system, kidney)</p> <p>Causes damage to organ (respiratory system)</p> <p>Systemic toxicity</p> <p>Respiratory organ sensitization</p> <p>May cause damage to the following organs through prolonged or repeated exposure(Respiratory system)</p> <p>May cause damage to aquatic life through prolonged or repeated exposure</p>
Precautionary Statement	:	<p>[Precaution]</p> <p>Do not breathe dust, mist, vapors, etc.</p> <p>Avoid release to the environment.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Use appropriate personal protective equipment.</p> <p>Wash personal protective equipment thoroughly after use.</p> <p>Wash hands thoroughly after handling.</p> <p>Use protective globes.</p> <p>When dust is generated, seal the source, and wear respiratory protection equipment.</p> <p>[Action]</p> <p>If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation persists: Get medical advice/attention.</p> <p>If on skin: Wash with plenty of soap and water. Then Remove/Take off all contaminated clothing and adhered materials. If skin irritation or rash occurs: Get medical advice/attention.</p> <p>Immediately get medical advice/attention if you feel unwell.</p> <p>If exposed or concerned: Get medical advice/attention.</p> <p>Adsorb spillage with waste clothes or wiping clothes, and collect in empty containers. Rinse away the remains with plenty of water.</p> <p>[Storage]</p> <p>This CRM should be kept in locked and keyed.</p> <p>Keep out direct sun light and high relative humidity. Store this CRM in a clean place at normal room temperature.</p> <p>[Disposal]</p> <p>Dispose of this reference material in accordance with applicable</p>

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 or mixture	: Mixture (Alloy)
Chemical name	: Iron-Nickel-Chromium alloy
Synonym	: -
Chemical formula	: Fe, Ni, Cr
Molecular weight	: -
CAS number	: Chromium:7440-47-3 Nickel:7440-02-0 Iron:7439-89-6
Content	: Cr:30 % Ni:60 % Fe:10 %
Reference Number in Gazetted List in Japan	: Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : - Industrial Safety and Health Act : -
Hazardous substance	: Chromium, Nickel

4. First-aid measures

If in Eyes	: Rinse cautiously with clean water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention immediately.
If on skin	: Rinse with a large amount of water and soap. If developing some symptoms, seek diagnostic / medical attention as needed.
If Inhaled	: Remove victim to fresh air and keep at rest and warm. Get medical advice/attention.
If Ingested	: Rinse mouth thoroughly with water. Drink a lot of water then it induces vomiting. Immediately call a physician.
Protecting Personnel in emergency measures	: Wear protective equipment such as rubber gloves, eye protective goggles.

5. Fire-fighting Measures

Extinguishing Media	: Use extinguishing media for peripheral fire.
Fire-Specific Hazards	: This material is nonflammable. In the case of fire, irritating or toxic fume (or gas) may be generated.
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 : May cause allergy, use appropriate personal protective equipment.

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 the contaminated items in an empty container.

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

Engineering Precautions : Do not handle with bare hands.

Local and General Ventilation : When dust is generated, seal the source, and provide local exhaust ventilation or central ventilation.

Precautions for Safe Handling : Avoid rough handling such as turning over, dropping, giving a shock to or dragging containers.
Prevent spill, overflow and scattering, and avoid vapor generation.
Keep container tightly closed after using this reference material.
Wash hands, face etc. thoroughly and gargle after handling this reference material.
Do not eat, drink, or smoke during handling
Restrict drinking, eating and smoking to a designated area.
Use appropriate personal protective equipment to avoid inhalation and contact with eyes, skin and clothing.
Do not bring gloves and other contaminated personal protective equipment into staff room.

Make a place handling this reference material a restricted area to keep out unauthorized people.
Avoid contact with water and acids.

Storage

- Appropriate Storage : Store in clean and dry place such as a desiccator at normal room Conditions temperature.
- Safe Container : Plastics container
- Packaging Material

8. Exposure Controls/Personal Protection

Threshold Limit Value

No data

Permissible Concentration (Nickel)

- ACGIH TLV-TWA : 1.5 mg/m³
(2000)
- Values recommended : 1 mg/m³
by Japan Society for Occupational Health
(2000)
- OSHA PEL TWA : 1 mg/m³

Permissible Concentration (Chromium)

- ACGIH TLV-TWA : 0.5 mg/m³
(2000)
- Values recommended : 0.5 mg/m³
by Japan Society for Occupational Health
(2000)
- OSHA PEL TWA : 1 mg/m³

Facility engineering

- Keep container tightly closed and install local ventilation system when dust is generated.
- Install facilities to rinse eyes and to wash hands and body in the vicinity of a place handling this reference material and label them.

Personal Protective equipment

- Respiratory protection : Protective dust mask, if necessary
- Hands : Protective gloves
- Eyes : Eye protector (Goggle type as necessary)
- Skin and Body : Protective clothing

Hygiene measure : Treat in accordance with rules on Industrial hygiene and Industrial safety.

9. Physical and Chemical Properties

- Appearance, etc. : Rectangular piece of metal of about 3 mm × 10 mm × 15 mm
- Color : No data
- 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 : No data
- *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

- Reactivity is week.

◇Conditions to Avoid

- Contact with water or oxidizing substances may cause rust.

◇Hazardous Decomposition Products

- No data

11. Toxicological Information

Serious Eye Damage/ <Chromium>

Eye Irritation Powder may cause a (mechanical) irritation. (SITTIG(47th,2002), HSDB(2005), ICSC(2004)).

Respiratory Sensitization <Chromium>

Japan Society for Occupational Health: For humans, this reference material probably causes respiratory sensitization.

<Nickel>

Japan Society for Occupational Health (2005): Respiratory tract substance (Group 2).

Japan Society of Occupational Allergy, and DFG: Respiratory tract substance

Carcinogenicity <Chromium>

Metal chromium, chromium alloy and chromium plating, as they are, do not cause skin sensitization. When they are dissolved due to moisture and when humans are exposed to chromium ions, however, skin sensitization may be caused.

<Nickel>

Japan Society for Occupational Health (2005): Skin Sensitization substance (Group 1)

	Japan Society of Occupational Allergy, and DFG: Skin Sensitization substance
Carcinogenicity	<Chromium> IARC Groupe3 (not specified for human Carcinogenicity) ACGIH A4 (not specified) <Nickel> NTP (2005) R (as Nickel metal) IARC (1990) 2B (as Nickel metal)
Specific Target Organ	<Chromium>
Toxicity/Systemic	May cause metal fume fever. (SITTIG (47th, 2002), HSFS (2000))
Toxicity (Single Exposure)	Human respiratory tract irritation was reported. (HSDB (2005)) <Nickel> Based on the description “Damage and hydrops on alveolar wall in alveoli area, and serious tubulonecrosis in kidney” (ATSDR (2005)), it was assumed that respiratory apparatus and kidney are the target organs.
Specific target organ / systemic toxicity (repeated exposure)	<Nickel> Based on the descriptions “Pleurisy, pneumonia, hemostasis, and hydrops” (CaPSAR (1994)), “Increase in lamellar body combined to alveoli was observed” (ATSDR (2005)), and so on, it was assumed that respiratory apparatus is the target organ.
Water environment toxicity (chronic)	Although L(E)C50 ≤ 100mg/L data is available, behavior in the water is unknown because it is metal.

12. Ecological Information

Persistence and Degradability

- No data available

Bioaccumulative Potential

- No data available

Ecotoxicity

- No data available

13. Disposal Considerations

- Dispose in accordance with applicable regional, national and local laws and regulations.
- Dispose of containers after thoroughly removing their contents.

14. Transport Information

UN Number : Not applicable

UN Classification : Not applicable

Shipping Name : -

Packing Group : -

ICAO/IATA : -

Marine Pollutant Precautions : Not applicable
: Transport this reference material carefully while keeping it away from direct sunlight and humidity, and preventing accidental release due to falling, overturning, etc.

15. Regulatory Information

◇ Pollutant Release and Transfer Register (PRTR) Law

- Class 1 Designated Chemical Substance

◎ **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

- Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR system Pollutant Release and Transfer Register), Complete Substances Data subject to PRTR, MSDS (Revised Edition) (2001)
- International Chemical Safety Cards (ICSC) Japanese version, The Chemical Daily (1992)
- National Institute of Technology and Evaluation, <http://www.safe.nite.go.jp/ghs/list.html>
- GHS Model MSDS Information, Japan Industrial Safety and Health Association, Japan Advanced Information Center of Safety and Health, http://www.jaish.gr.jp/anzen/gmsds/gmsds_index.html

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.
