Safety Data Sheet

1. Identification of the Substance/Mixture and the Supplier

Supplier	:	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
Person in Charge	:	Certified Reference Material Staff
Telephone No.	:	+81-29-861-4059 Fax No. : +81-29-861-4009
Emergency Contact	:	Same as above
		Creation date : February 28, 2020
		Revised on : August 11, 2020
		Reference No. : 7408001
Identity of Substance/Mixture	:	Certified Reference Material NMIJ CRM 7408-a Neonicotinoid Pesticides in Artificial Urine
Recommended Use of the Chemical and Restriction on Use	:	This CRM is intended for use in accuracy control of analysis and validation for analytical methods or instruments for the determination of neonicotinoid pesticides in urine. Do not use this reference material for other purposes than testing/research.

2. Hazards Identification

GHS classification :

Acute toxicity (Oral)	: Not classified
Acute toxicity (Dermal)	: Not classified
Acute toxicity (Inhalation, gas)	: Not applicable
Acute toxicity (Inhalation, vapor)	: Not classified
Acute toxicity (Inhalation, dust/mist)	: Not applicable
Skin corrosion/irritation	: Classification not possible
Severe eye damages/eye irritation	: Not classified
Respiratory sensitization	: Classification not possible
Skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Classification not possible
Reproductive toxicity	: Class 1B
Specific target organ toxicity/systemic toxicity (Single exposure)	: Class 2 (central nervous system, visual organ)
Specific target organ toxicity /systemic toxicity (Repeated exposure)	: Class 2(central nervous system, visual organ)
Aspiration hazard	: Classification not possible
Hazardous to the aquatic environment (Acute)	: Not classified
Hazardous to the aquatic environment (Long-term)	: Not classified

GHS label element :

Signal word : Caution

Hazards Statement : May be harmful if swallowed.
May cause eye irritation
May damage fertility or the unborn child.
Causes damage to organs (visual organ and nerve system)
May have systemic Toxicity
May cause respiratory irritation
May cause drowsiness or dizziness
Causes damage to organs (visual organ and nerve system) through prolonged or repeated exposure

Precautionary Statement : [Safety Precaution]
Get the instruction manual before use.
Do not handle until all safety precautions have been read and understood.
Use personal protective equipment if necessary.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after use.
Keep container tightly closed after using this reference material.
[First-Aid Measures]
If exposed or concerned: Get medical advice/attention.
If you feel unwell: Get medical advice/attention.
If in eyes: Rinse cautiously with clean water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
If on skin or hair: Remove/Take off all contaminated clothing and adhered materials. Rinse skin or hair with running water.
[Storage]
Store at temperatures of −20 °C to −30 °C under dark conditions.
[Disposal]
Dispose of this CRM in accordance with applicable legislation and local government ordinance. Entrust disposal of this CRM to a professional waste disposal company licensed by the prefectural governor.
Hazards other than those listed above have not resulted in classification or are not classifiable.

3. Composition/Information on Ingredients

Substance or mixture : Mixture

Chemical name : Neonicotinoid Pesticides in Artificial Urine

Ingredient 1 : Artificial Urine
This artificial urine contains urea (2.50% (w/v)), sodium chloride (0.90% (w/v)), anhydrous disodium hydrogen phosphate (0.25% (w/v)), ammonium chloride (0.30% (w/v)), dipotassium hydrogen phosphate (0.25%(w/v)), creatinine (0.2%(w/v)), sodium sulfite heptahydrate (0.3%(w/v)), and water (solvent).

Chemical formula : -

Molecular weight : -

CAS number	:	-
Content	:	97 % or over
Molecular weight	:	-
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 : -
Ingredient 2	:	Methanol (Methyl alcohol)
Synonym	:	Methyl alcohol, Wood alcohol
Chemical Formula or Structural Formula	:	CH_3OH
Molecuar Weight	:	32.04
CAS Number	:	67-56-1
Content	:	Ca. 2.5 %
Reference Number in Gazetted List in Japan	:	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : (2)-201 Industrial Safety and Health Act : Published

This CRM contains minor ingredients listed below.

Ingredients	CAS number	Content (μg/kg)
Acetamiprid	106430-64-8	1.38
Clothianidin	210880-92-5	1.34
Thiacloprid	111988-49-9	0.19
Thiamethoxam	153719-23-4	1.32
Imidacloprid	138261-41-3	1.5
Dinotefuran	165252-70-0	13
Acetamiprid-*N*-desmethyl	190604-92-3	1.26
Nitenpyram	150824-47-8	0.8

4. First-aid Measures

If Inhaled	:	Remove victim to fresh air and keep at rest and warm. Get medical advice/attention.
If on Skin	:	Rinse thoroughly with clean water. Remove/Take off contaminated clothing, etc. If skin irritation or rash occurs: Get medical advice/attention.
If in Eyes	:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
If Swallowed	:	Rinse mouth thoroughly with water and get medical advice/attention.
Protection of First-Aid Responders	:	Use personal protective equipment.

5. Fire-fighting Measures

Extinguishing Media	:	This reference material is incombustible. Use extinguishing media appropriate for surrounding fire.
Fire-Specific Hazards	:	In case of fire: May emit irritating or toxic fume (or gas). Fight fire upwind. Use personal protective equipment to avoid inhaling fume or toxic gases.
Specific Fire-Fighting	:	Eliminate ignition sources at the origin of a fire and put out fire by

Method		using appropriate extinguishing media. Remove movable containers promptly to a safe place. If containers are immovable, cool their surroundings with water spray.
Protection of Fire-Fighters	:	Use compressed air open-circuit self-contained breathing apparatus and protective clothing for surrounding fire.

6. Accidental Release Measures

Personal Precaution	:	Keep away from spillage.
Personal Protective Equipment and Emergency Procedure	:	Use suitable personal protective equipment to avoid contact with skin and eyes and contamination of personal clothes.
Environmental Precaution	:	Take precautions to prevent spillage from draining into rivers etc. to adversely affect 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 leaked liquid in an empty container by making it absorbed to waste cloth, sand, soil, etc. to prevent the leaked liquid and vapor from spreading. Rinse away the remains with plenty 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

Engineering Precautions	:	Avoid direct contact with any parts of human body.
Local and General Ventilation	:	If vapor or mist is emitted: Seal the source. Provide local exhaust ventilation or general ventilation.
Precautions for Safe Handling	:	Avoid rough handling such as knocking over, dropping, giving a shock to and dragging container. Prevent this reference material from leaking, overflowing and splashing. Do not allow vapor to be emitted. Close the container valve firmly after use. Wash hand and face thoroughly and gargle after handling. Restrict drinking, eating and smoking to designated areas. 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. Use appropriate personal protective equipment to avoid inhalation and contact with eyes, skin, and clothes.

Storage

Appropriate Storage Condition	:	Store in a dark clean place at temperatures of about −20 °C to −30 °C.
Safe Container Packaging Material	:	Glass

※ See the Certificate for the details on appropriate storage conditions and instructions for use as a

reference material.

8. Exposure Controls/Personal Protection

Administrative levels (Artificial Urine)

Not specified

Occupational exposure limit (Methanol)

- ACGIH TLV-TWA : 200 ppm (260 mg/m^3)
- Value recommended by Japan Society for Occupational Health : 200 ppm (260 mg/m^3)
- OSHA PEL TWA : 200 ppm

Facility engineering control

Ventilation, exhaust	:	Local ventilation system or General ventilation system
Safety management, gas detection	:	Measuring instrument, detector
Storage precaution	:	Keep the container airtight. Keep away from flammable substances, reducing agents and strong oxidizers.

Protective equipment

Respiratory organ	:	Protective mask, appropriate respiratory protective equipment such as air respirator if necessary.
Hand	:	Protective gloves
Eyes	:	Protective eyeglasses, safety goggles
Skin and body	:	Protective clothing, face mask

Hygiene Measures

Handle this reference material in accordance with the industrial health and safety codes.

9. Physical and Chemical Properties and Safety Characteristics

As this reference material is composed mostly of artificial urine, the properties of artificial urine are described below.

Appearance, etc.	:	Liquid
Color	:	Clear and colorless
Odor	:	No data available
pH	:	No data available
Melting point	:	About 0 °C
Boiling point	:	About 100 °C
Flashing point	:	Incombustible
Explosive range	:	No data available
Vapor pressure	:	No data available
Relative vapor density (Air=1)	:	No data available
Specific gravity or bulk specific gravity	:	About 1 g/cm^3 (25 °C)
Solubility	:	Mix well with water.
n-Octanol/water partition coefficient (Log Po/w)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available

Flammability	:	Incombustible

10. Stability and Reactivity

Stability	:	Stable in normal conditions
Reactivity	:	React with alkali substances
Possibility of hazardous reaction	:	No data available
Conditions to avoid	:	Sunlight and high temperature
Incompatible materials	:	No data available
Hazardous decomposition products	:	No data available

11. Toxicological Information (Methanol)

Acute toxicity	:	Oral: Rat LD50=6200 mg/kg Dermal: Rabbit LD50=15800 mg/kg
Skin corrosivity/ irritation	:	No data available
Serious eye damage/ Eye irritation	:	In the Draize test using rabbits, the mean score for conjunctivitis after 24, 48, and 72 hours was 2.1 (greater than 2.0), and conjunctive edema was observed for 4 hours (score 2.00), but it was noticeably improved after 72 hours (score 0.50). However, it is unknown whether the symptoms recovered within 7 days.
Respiratory sensitization	:	No data available
Skin sensitization	:	No data available
Germ cell mutagenicity	:	No data available
Carcinogenicity	:	Not classifiable
Reproductive toxicity	:	In a test of pregnant mice exposed through inhalation during the period of organogenesis, fetal resorption and exencephaly were observed. In separate inhalation and oral exposure tests, similar results were obtained, including cleft palate. As for the effect of methanol on reproduction, there is sufficient evidence to provide a strong presumption on the basis of sound scientific judgment that exposure to methanol may result in health impairment. Although the available data on humans are limited, there is clear evidence for effects on animals, and it is concluded that prolonged human exposure to methanol may result in adverse effects on development on human fetus. It is accordingly assumed that it causes developmental toxicity to humans.
Specific organ toxicity (single exposure)	:	Symptoms of acute intoxication in humans include central nervous system depression and metabolic acidosis resulting from formic acid accumulation in blood. Symptoms such as vision disorders, blindness, headache, dizziness, nausea, vomiting, tachypnea, and coma can occur, in addition to death. Disorders in the central nervous system, specifically tremor and extrapyramidal paralysis, as well as cerebral white matter necrosis, have been reported. The visual organs are the primary target organs; eye disorders are distinctive clinical features of metabolic acidosis, in addition to headache, nausea, vomiting, tachypnea, and coma. Anesthesia was induced by inhalation exposure in mice, rats, and humans as a result of central nervous

system depression.

Specific organ toxicity (repeated exposure)	:	In humans, prolonged exposure to low-concentration methanol caused eye damage; blindness is a toxic effect of chronic occupational methanol exposure. Chronic toxic symptoms caused by repeated exposure to methanol vapor including headache, dizziness, insomnia, and stomach disorders have been reported. Although changes in liver weight and hepatocyte hypertrophy have been reported in rats following oral administration, such changes are considered to be adaptive changes to methanol exposure.
Aspiration hazard	:	No data available

* Section "Toxicological Information" is prepared based on the information on the raw materials because no information on the mixture is available.

This reference material is stable under normal condition, and there is no risk of noxious additive ingredient elusion. In case of handling this reference material under special conditions, such as high temperatures, however, it is recommended to take sufficient safety precautions for appropriate use.

12. Ecological Information

Ecotoxicity	:	No data
Persistence and Degradability	:	No data
Bioaccumulative Potential	:	No data
Mobility in soil	:	No data
Influence to the ozone layer	:	No data

13. Disposal Considerations

Residual Waste	:	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.
Contaminated Container and Package	:	Dispose of containers after thoroughly removing their contents.

14. Transport Information

UN Number	:	Not applicable
UN Classification	:	Not applicable
Material name	:	Not applicable
Container grade	:	Not applicable
ICAO/IATA	:	Not applicable
Marine pollutant	:	Not applicable
Precaution	:	Transport this reference material carefully while keeping it away from direct sunlight and fire and preventing accidental release due to falling, overturning, etc.

15. Regulatory Information

・No applicable laws and regulations

◇ Industrial Safety and Health Act

- Article 57 (Enforcement Order: Article 18)　Hazardous substance whose name, etc. must be labeled No. 560.
- Article 57-2 (Enforcement Order: Article 18-2)　Hazardous substance whose name, etc. must be notified No. 560.

◎ **This SDS was originally prepared for the use of the reference material in Japan, and therefore Section 15 "Regulatory Information" covers only those laws and regulations which are enacted and enforced in Japan. In case of using this reference material outside of Japan, it is necessary to refer to and apply relevant laws and regulations of the country in which it is used.**

16. Other Information

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.