SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision Date 1-Jul-2023
Version 2

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product name	LabAssay™Ammonia
Product code	633-51761

Manufacturer
FUJIFILM Wako Pure Chemical Corporation
1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
Phone: +81-6-6203-3741
Facsimile: +81-6-6203-2029

Supplier
FUJIFILM Wako Pure Chemical Corporation
1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
Phone: +81-6-6203-3741
Facsimile: +81-6-6203-2029

Emergency telephone number
+81-6-6203-3741 / +81-3-3270-8571

Recommended uses and restrictions on use
For research use only

Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Acute toxicity - Oral	Category 4
Acute toxicity/ inhalation	Category 1
Serious eye damage/ eye irritation	Category 1
Germ cell mutagenicity	Category 1B
Reproductive toxicity	Category 1B
Specific target organ toxicity (signal exposure)	Category 2, Category 3
Category 2 respiratory system, cardiovascular system, kidneys, nervous system	
Category 3 Respiratory tract irritation	
Specific target organ toxicity (repeated exposure)	Category 2
Category 2 central nervous system, thymus, spleen, kidneys, blood system, digestive system, cardiovascular system, respiratory system	
Short-term (acute) hazardous to the aquatic environment	Category 3
Long-term (acute) hazardous to the aquatic environment	Category 3

Pictograms

Signal word Danger

Hazard statements
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H302 - Harmful if swallowed
H340 - May cause genetic defects
H360 - May damage fertility or the unborn child
H335 - May causes respiratory irritation
H402 - Harmful to aquatic life

H412 - Harmful to aquatic life with long lasting effects
H371 - May causes damage to the following organs: respiratory system, cardiovascular, kidneys, nervous system
H373 - May causes damage to the following organs through prolonged or repeated exposure: central nervous system, thymus, spleen, kidneys, blood system, digestive system, liver, cardiovascular system, respiratory system

Precautionary statements-(Prevention)
- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Do not breath dust/ fume/ gas/ mist/ vapors/ spray
- Use only outdoors or in a well-ventilated area
- Avoid release to the environment

Precautionary statements-(Response)
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Immediately call a POISON CENTER or doctor/ physician
- IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- Wash contaminated clothing before reuse.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Call a POISON CENTER or doctor/ physician if you feel unwell
- I F SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell
- Rinse mouth
- DO NOT induce vomiting

Precautionary statements-(Storage)
- Store locked up
- Store in a well-ventilated place. Keep container tightly closed

Precautionary statements-(Disposal)
- Dispose of contents/container to an approved waste disposal plant

Others

Other hazards Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Kit (Set of mixtures)

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Deproteinizing Reagent	-	N/A	N/A	N/A	N/A-29-7891
Chromogen Reagent A	-	N/A	N/A	N/A	N/A-29-7892
Chromogen Reagent B	-	N/A	N/A	N/A	N/A-29-7893
Chromogen Reagent C	-	N/A	N/A	N/A	N/A-29-7894
Ammonia Standard Solution	-	N/A	N/A	N/A	N/A-29-7895
Dilute Solution for Standard	-	N/A	N/A	N/A	N/A-29-7896

Impurities and/ or Additives： Not applicable

Hazardous Component: Potassium Hydroxide <5%, Phenol <5%, Sulfuric Acid <2%, Sodium pentacyanonitrosylferrate(III) dihydrate 0.015%

Substances Remarks: The composition considered to be hazardous are listed in the above. The remaining ingredients are not hazardous substances, or exist at below reportable level.

Section 4: FIRST AID MEASURES

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Skin contact

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Protection of first-aiders

Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media

Water spray (fog), Carbon dioxide (CO2), Form, Extinguishing powder, Sand

Unsuitable extinguishing media

No information available

Specific hazards arising from the chemical product

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Special extinguishing method

No information available

Special protective actions for fire-fighters

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for contaminant and methods and materials for cleaning up

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Recovery, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Handling

Technical measures

Avoid contact with strong oxidizing agents. Use with local exhaust ventilation.

Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Storage

Safe storage conditions

Storage conditions	Keep container protect from light tightly closed. Store in a cool (2-10℃) place. Store locked up.
Safe packaging material	Polyethylene, Glass

Incompatible substances Strong oxidizing agents

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
Sodium tungstate (VI) dihydrate 10213-10-2	N/A	N/A	TWA: 3 mg/m^3 W respirable particulate matter in the absence of cobalt
Potassium Hydroxide 1310-58-3	Maximum; 2 mg/m^3	N/A	Ceiling: 2 mg/m^3
Phenol 108-95-2	TWA: 5 ppm OEL TWA: 19 mg/m^3 OEL Skin	N/A	TWA: 5 ppm Skin
Sulfuric Acid 7664-93-9	1 mg/m^3	N/A	TWA: 0.2 mg/m^3
Sodium pentacyanonitrosylferrate (III) dihydrate 13755-38-9	N/A	N/A	TWA: 1 mg/m^3 Fe

Personal protective equipment

Respiratory protection Gas mask for acidic gas
Hand protection Impermeable protective gloves
Eye protection Protective eyeglasses or chemical safety goggles
Skin and body protection Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form

Appearance Kit (Set of mixtures)
Odor No data available
Melting point/ freezing point No data available
Boiling point, initial boiling point and boiling range No data available
Flammability No data available
Evaporation rate: No data available
Flammability (solid, gas): No data available
Upper/ lower flammability or explosive limits
Upper： No data available
Lower： No data available
Flash point No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
pH No data available
Viscosity (coefficient of viscosity) No data available
Dynamic viscosity No data available
Solubilities No data available
n-Octanol/ water partition coefficient: (log Pow) No data available
Vapor pressure No data available

Specific Gravity/ Relative density No data available
Vapor density No data available
Particle characteristics No data available

Section 10: STABILITY AND REACTIVITY

Stability
Reactivity No data available
Chemical stability May be altered by light
Hazardous reactions
None under normal processing
Conditions to avoid
Extremes of temperature and direct sunlight
Incompatible materials
Strong oxidizing agents
Hazardous decomposition products
Carbon monoxide (CO), Carbon dioxide (CO_2), Nitrogen oxides (NOx), Sulfur oxides (SOx), Metal oxides

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Potassium Hydroxide	273 mg/kg (Rat)	N/A	N/A
Phenol	317 mg/kg (Rat) 340 mg/kg (Rat)	630 mg/kg (Rabbit)	316 mg/m^3 (Rat) 4h
Sulfuric Acid	2140 mg/kg (Rat)	N/A	347 ppm (Rat) 4h
Sodium pentacyanonitrosylferrate (III) dihydrate	113 mg/kg (Rat)	N/A	N/A

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Potassium Hydroxide	Based on the NITE GHS classification results	Based on the NITE GHS classification results	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results	Based on the NITE GHS classification results	Based on the NITE GHS classification results
Sulfuric Acid	Based on the NITE GHS classification results	Based on the NITE GHS classification results	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results	Based on the NITE GHS classification results	Based on the NITE GHS classification results

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust- source information	Acute toxicity -inhalation mist- source information
Potassium Hydroxide	Based on the NITE GHS classification results	Based on the NITE GHS classification results	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results	Based on the NITE GHS classification results	Based on the NITE GHS classification results
Sulfuric Acid	Based on the NITE GHS classification results	Based on the NITE GHS classification results	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results	Based on the NITE GHS classification results	Based on the NITE GHS classification results

Skin irritation/ corrosion

Chemical Name	Skin corrosion/ irritation source information

Potassium Hydroxide	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results
Sulfuric Acid	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results

Serious eye damage/ irritation

Chemical Name	Serious eye damage/ irritation source information
Potassium Hydroxide	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results
Sulfuric Acid	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results

Respiratory or skin sensitization

Chemical Name	Respiratory or skin sensitization source information
Potassium Hydroxide	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results
Sulfuric Acid	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results

Reproductive cell mutagenicity

Chemical Name	Germ cell mutagenicity source information
Potassium Hydroxide	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results
Sulfuric Acid	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results

Carcinogenicity

Chemical Name	Carcinogenicity source information
Potassium Hydroxide	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results
Sulfuric Acid	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results

Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Phenol 108-95-2	-	Group 3	-	-
Sulfuric Acid 7664-93-9	-	Group 1	A2	-

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Potassium Hydroxide	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results
Sulfuric Acid	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Potassium Hydroxide	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results
Sulfuric Acid	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Potassium Hydroxide	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results
Sulfuric Acid	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Potassium Hydroxide	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results

Sulfuric Acid	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/ aquatic plants	Fish	Crustacea
Potassium Hydroxide	N/A	LC50: *Gambusia affinis* 80 mg/L 96h	N/A
Phenol	EC50: *Desmodesmus subspicatus* 187-279 mg/L 72h static	LC50: *Oncorhynchus mykiss* 4.23-7.49 mg/L 96h	LC50: *Ceriodaphnia dubia* 7.83 mg/L 48h
Sulfuric Acid	N/A	LC50: *Lepomis macrochirus* 16-28 mg/L 96h	LC50: *Daphnia magna* 29 mg/L 24h

Other data

Chemical Name	Short-term (acute) hazardous to the aquatic environment source information	Long-term (chronic) hazardous to the aquatic environment source information
Potassium Hydroxide	Based on the NITE GHS classification results	Based on the NITE GHS classification results
Phenol	Based on the NITE GHS classification results	Based on the NITE GHS classification results
Sulfuric Acid	Based on the NITE GHS classification results	Based on the NITE GHS classification results
Sodium pentacyanonitrosylferrate (III) dihydrate	Based on the NITE GHS classification results	Based on the NITE GHS classification results

Persistence and degradability No information available
Bioaccumulative potential No information available
Mobility in soil No information available
Hazard to the ozone layer No information available

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

ADR/RID

UN number UN1760
Proper shipping name: Corrosive liquid, n.o.s. (Diluted Sulfuric Acid)
UN classification 8
Subsidiary hazard class
Packing group II
Marine pollutant Not applicable

IMDG

UN number UN1760
Proper shipping name: Corrosive liquid, n.o.s. (Diluted Sulfuric Acid)
UN classification 8
Subsidiary hazard class
Packing group II

Marine pollutant (Sea)	Not applicable
Transport in bulk according to Annex II of MARPOL 73/ 78 and the IBC Code	No information available

IATA

UN number	UN1760
Proper shipping name:	Corrosive liquid, n.o.s. (Diluted Sulfuric Acid)
UN classification	8
Subsidiary hazard class	
Packing group	II
Environmentally Hazardous Substance	Not applicable

Section 15: REGULATORY INFORMATION

International Inventories

EINECS/ELINCS	-
TSCA	-

Japanese regulations

Fire Service Act	Not applicable
Poisonous and Deleterious Substances Control Law	Poisonous Substances 2nd.Grade
Industrial Safety and Health Act	Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) Group 3 Specified Chemical Substance, (Ordinance on Prevention of Hazards Due to Specified Chemical Substances Art.2 Para.1, Item 6) Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9) No.316, 337, 474, 613
Act on the Evaluation of Chemical Substances and Regulation of their Manufacture, etc	Priority Assessment Chemical Substances (Low Article 2, Para.5)
Regulations for the carriage and storage of dangerous goods in ship	Corrosive Substances (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
Civil Aeronautics Law	Corrosive Substances (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1)
Pollutant Release and Transfer Register Law	Class 1
Class1 No.	349
Water Pollution Control Act	Harmful Substances (Law Art.2, Enforcement Order Art.2, Ordinance Designating Wastewater Standards Art.1) Specified substances (Law Art.2, Para.4, Enforcement Order Art.3-3)
Export Trade Control Order	Not applicable

Pollution Release and Transfer Registry

Class	Chemical Name in Regulation	(Metal Name)	Ordinance Number	Content Rate
Class1	Phenol		349	<5

Industrial Safety and Health Law

Law Name	Chemical Name in Regulation	Ordinance Number	Weight %
Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9, and Law Art.56-1)	Potassium hydroxide	316	<5
Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9, and Law Art.56-1)	Tungsten and soluble compounds	337	>1
Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached	Phenol	474	<5

Table No.9, and Law Art.56-1)			
Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9, and Law Art.56-1)	Sulfuric acid	613	<2

Poisonous and Deleterious Substances Control Law

SECTION	Chemical Name in Regulation
Poisonous Substances	Inorganic cyanides and their preparations

Section 16: OTHER INFORMATION

Key literature references and sources for data etc.

NITE: National Institute of Technology and Evaluation (JAPAN)
http://www.safe.nite.go.jp/japan/db.html
IATA dangerous Goods Regulations
RTECS: Registry of Toxic Effects of Chemical Substances
Japan Industrial Safety and Health Association GHS Model SDS
Dictionary of Synthetic Organic Chemistry, SSOCJ, Koudansha Scientific Co.Ltd.
Chemical Dictionary, Kyouritsu Publishing Co., Ltd.
etc

Disclaimer

This SDS is according to JIS Z 7253: 2019. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
GHS Classification is according to JIS Z7252(2019). *JIS: Japanese Industrial Standards

End of Safety Data Sheet