



### 3. Composition/ information on ingredients

Discrimination of single substance or mixture: Mixture

Reagent name	R-1 reagent			R-2 reagent		
	Ammonium acetate	Acetic acid	Water	Eriochrome Cyanine R	Other ingredient	Extender
Content	<35%	<5%	>60%	<1%	<10%	>89%
Chemical formula	CH <sub>3</sub> COONH <sub>4</sub>	CH <sub>3</sub> COOH	H <sub>2</sub> O	C <sub>23</sub> H <sub>15</sub> Na <sub>3</sub> O <sub>9</sub> S	-	-
METI No. (reference number under CSCL in Japan)	(1)-391	(2)-688	—	-	-	-
CAS No.	631-61-8	64-19-7	7732-18-5	3564-18-9	-	-

### 4. First-aid measures

If reagents or developed sample;

Enter in eyes: Immediately rinse eyes with water for more than 15 minutes followed by the treatment by an ophthalmologist.

Contact with skin: Immediately wash out contaminated site with plenty of water.

Enter into mouth: Immediately rinse mouth with plenty of water.

If any symptoms appear after above measures, immediately get medical advice or treatment.

Especially in case ingested reagents or test solutions, drink plenty of water or milk and immediately get medical advice or treatment.

### 5. Fire-fighting measures

Extinguishing methods: Cut off ignition sources and extinct by a suitable media.

Suitable extinguishing media: Water (mist), powder, carbon dioxide and dry sand.

### 6. Accidental release measures

In case of outdoor use: Avoid spill of reagents and waste solutions.

In case of indoor use: If spilled on a table or floor, wipe off immediately spilled reagents and dispose of them.

Concentrated solutions should not be released into sewer or rivers.

### 7. Handling and storage

Handling: Avoid eyes contact, skin contact, ingestion and inhalation of reagents.

Especially for outdoor use, ensure to bring back reagents, liquid waste after the measurement and used containers.

Storage: Avoid direct sunlight and store in a well-ventilated, cool, dry and dark place.

### 8. Exposure controls and personal protection

Administrative control level

Working environment standard: Not established

Occupational exposure limits

Japan Society for Occupational health: 10 ppm

ACGIH (TLVs): TWA 10 ppm, STEL 15 ppm

OSHA (PEL): TWA 10 ppm (only for Acetic acid)

Protective equipment: Recommend to wear protective glasses and gloves.

## 9. Physical and chemical properties

Physical state: R-1: liquid reagent 60 mL x 1 plastic bottle in a plastic bag  
R-2: powder reagent 0.21 g x 30 tubes in an aluminum laminated bag  
Color: R-1: transparent (liquid), R-2: red (powder)  
Odor: R-1: Acetic acid like odor, R-2: no odor  
pH: 6 (R-1 reagent, developed sample)

Melting point, boiling point, flash point, ignition point, lower explosion limit, vapor pressure, density, relative density, solubility, Pow, kinetic viscosity: not available as a mixture.

## 10. Stability and reactivity

Avoid leaving in a place where high temperature, humid or under direct sunlight. Stable under normal use conditions and no dangerous reactions under specific conditions are expected. No information on hazardous decomposition product is available.

## 11. Toxicological information

No data on mixture is available. Data on R-1 and R-2 reagents are shown below.

### R-1 reagent

#### Ammonium acetate:

##### Acute toxicity:

Intraperitoneal: Rat-LD<sub>50</sub> = 632 mg/kg (RTECS), Mouse-LD<sub>50</sub> = 736 mg/kg (RTECS)

Intravenous: Mouse-LDLo = 386 mg/kg (RTECS)

Other data: Not available.

#### Acetic acid:

##### Acute toxicity:

Oral: Classified as Category 5 based on lower value of two rat LD<sub>50</sub> data (3,310 and 3,530 mg/kg) (PATTY 5th (2001)).

Dermal: Classified as Category 4 based on data that Rabbit LD<sub>50</sub> = 1,060 mg/kg (PATTY 5th (2001)).

Inhalation (dust-mist): Classification is not possible; no data obtained in mist is available because a saturated vapor pressure of acetic acid is 20,800 ppm and is supposed that an inhalation study has been conducted in as a vapor.

Skin corrosion/ irritation: Classified as Category 1 based the following data;

Skin necrosis and burns were observed at 50% and higher concentration of acetic acid in animal tests (PATTY 5th (2001)). Corrosive to skin (IUCLID (2004)) and EU-Annex 1 classifies as C; R35 and Category 1A – 1C.

Serious eye damage/ eye irritation: Classified as Category 1 based on the following data;

Liquid glacial acetic acid caused serious eye damage in rabbit (PATTY 5th (2001)), 16% acetic acid caused permanent corneal damage (IUCLID (2004)), irreversible corneal torpor and opacity in human accident case (PATTY 5th (2001)).

Respiratory or skin sensitization

Respiratory sensitization: Classified as Category 1 based on the following data;

Four epidemiological data were available that respiratory asthma and hyper-sensitivity in human inhalation exposure, and occupational asthma cases were also reported (PATTY 5th (2001)).

Skin sensitization: No data.

Germ cell mutagenicity: Classification is not possible because only negative data in vitro mutagenicity is available but nothing others and according to the technical guidance.

Specific target organ toxicity (single exposure): Classified as Category 2 (respiratory organs) based on following data: Effects on blood such as disseminated intravascular coagulopathy and severe hemolysis in humans were reported (PATTY 5th (2001)). Inhalation exposure caused irritation to nose, upper airways and lung in humans (PATTY 5th (2001)), and corrosion to respiratory organs and lung edema may be observed in humans if inhaled vapor (ICSC (J) (1997)).

Other data: Not available.

### Water:

#### Acute toxicity:

Oral: Human-infant TDLo = 333 g/kg, cramping, attacks or fever.

Human-men TDLo = 42.86 g/kg, shaking, mussel pain.

	Rat LD <sub>50</sub> > 90 ml/kg
Intravenous:	Mouse-LD <sub>50</sub> = 25 g/kg
intraperitoneal:	Mouse-LD <sub>50</sub> = 190 mg/kg
Other data:	Not available.

**R-2 reagent**

Eriochrome cyanine R:

No data regarding health hazard is available.

GHS classification results of R-1 and R-2 reagents as mixtures are shown below.

[Acute toxicity (oral)]

R-1 reagent: Not classified based on application of the additive equation of LD<sub>50</sub> (rat) values of each ingredient.R-2 reagent: Not classified based on application of the additive equation of LD<sub>50</sub> (rat) values of each ingredient.

[Acute toxicity (dermal)]

R-1 reagent: Not classified based on application of the additive equation of LD<sub>50</sub> (rat) values of each ingredient.

[Skin corrosion/ irritation]

R-1 reagent: Classified as Category 2 (Warning, Causes skin irritation.) because category 1 is contained 1 to 5%.

[Serious eye damage/ eye irritation]

R-1 reagent: Classified as Category 1 (Danger, causes serious eye damage.) because category 1 is contained more than 3%.

R-2 reagent: Classified as Category 2B (Warning, Causes eye irritation.) because category 2B is contained more than or equal to 10%.

[Respiratory or skin sensitization]

R-1 reagent: Classified as Category 1 (Danger, May cause allergy or asthma symptoms or breathing difficulties if inhaled.) because category 1 is contained more than or equal to 1%.

[Specific target organ toxicity (single exposure)]

R-1 reagent: Classified as Category 2 (Warning, May cause damage to blood.) because category 1 is contained 1 to 10%.

R-1 and R-2 reagents: [Germ cell mutagenicity], [Carcinogenicity], [Reproductive toxicity], [Specific target organ toxicity (repeated exposure)], [Aspiration hazard], and;

R-2 reagent: [Skin corrosion/ irritation], [Respiratory or skin sensitization], [Specific target organ toxicity (single exposure)]

Classifications are not possible because of data lack.

**12. Ecological information**

No data on mixture is available. Data on R-1 and R-2 reagents are shown below.

**R-1 reagent**

Acetic acid:

Aquatic hazard Acute: Category 3 based on data that Crustacea (*Daphnia magna*): 24-h EC<sub>50</sub> = 47 mg/L (IUCLID, 2000).

Aquatic hazard Chronic: Not classified because rapidly degradable (Biodegradation by BOD = 74% (Data on existing chemicals)) and expected to have low bioaccumulation potential (log Kow = -0.17 (PHYSPROP Database, 2005)).

Other data: Not available.

Ammonium acetate, Water: No eco-toxicological information is available.

**R-2 reagent**

Eriochrome Cyanine R, Polyethylene: No eco-toxicological information available.

GHS classification results of R-1 and R-2 reagents as mixtures are shown below.

**R-1 reagent**

[Hazardous to the aquatic environment acute]

Contains less than 25% of category 3; Not classified.

[Hazardous to the aquatic environment chronic]

Contains only not classified ingredients; Not classified.

[Harmful effects on the ozone layer]

Classification is not possible because each of the substances is not described in Annex to Montreal Protocol.

**R-2 reagent**

[Hazardous to the aquatic environment acute], [Hazardous to the aquatic environment chronic]

Classifications are not possible because of data lack.

[Harmful effects on the ozone layer]

Classification is not possible because each of the substances is not described in Annex to Montreal Protocol.

### 13. Disposal considerations

Liquid waste contains ca. 110 mg of ammonium-nitrogen per measurement.

Always dispose according to local regulations.

### 14. Transport information

In addition to precautionary measures regarding handling and storage, avoid rough handling so as not to break containers. It is recommended to ship by air because under high temperature for long period may lead to deterioration.

UN classification and number: Not applicable (This product contains less than 10% of acetic acid)

Civil Aeronautics Act: Not applicable

Poisonous and Deleterious Substances Control Act:

Not applicable

Fire Service Act: Not applicable

Total weight of the product: ca. 175 g/kit

### 15. Regulatory information

PRTR Act: Not applicable

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Industrial Safety and Health Act: Applicable

This product contains more than 1% of acetic acid.

: "Cabinet order, article 18, shall be notified the Name of the substances, #2"

: "Cabinet order, article 18-2, shall be indicated the Name of the substances, #2"

Water Pollution Control Act: Applicable

Waste solution after measurement contains ammonium compound.

: "Cabinet Order set forth in Item (26) of Article 2".

Sewerage Act: Applicable.

Waste solution after measurement contains ammonium compound.

: "Cabinet Order set forth in Item (1) of Article 9-5".

### 16. Other information

#### Reference literature

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Material Safety Data Sheet No.JW010283, Wako Pure Chemical Industries, Ltd. (2007.09.03)

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Koukuu Kikenbutsu Yusou Houreisyu, Ed. MLIT, HOUBUN SHORIN CO., LTD. (2015)

JIS Z 7252:2014 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" (Japanese Industrial Standards Committee)

JIS Z 7253:2012 Hazard communication of chemicals based on GHS-Labeling and Safety Data Sheet (SDS) (Japanese Industrial Standards Committee)

UN GHS (tentative translation, forth revised version), GHS Kankei Syocho Renraku Kaigi (2011)

Ministry of Economy, Trade and Industry, GHS Classification Guidance for Enterprises 2013 Revised Edition (2013)

#### NOTE)

This information is not always exhaustive and use with care.

This data sheet only provides information but any description cannot be warranted.

Descriptions may possibly be changed because of new findings or modification of the current knowledge.

Precautions only cover normal handling.

This English SDS is prepared in the cooperation with the Chemicals Evaluation and Research Institute (CERI), Japan.