

Safety Data Sheet

Reference No. 2460

Issue: 19th December 1995
Revision: 1st April 2024

1. Chemical product and company identification

Product name	Reagent Set for Water Analyzer Total Cyanide	Model	LR-CN ^T
Company name	KYORITSU CHEMICAL-CHECK Lab., Corp.		
Address	1-18-2 Hakusan, Midori-ku, Yokohama, Kanagawa 226-0006, JAPAN		
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Dept. in charge	Sales Department		

Recommended uses and restrictions Reagent for water quality measurement

2. Hazards identification

[GHS Classification]

Physical hazards: Classification not possible (no data for GHS classification available)

Health hazards:

Acute toxicity (oral): Category 4 (applicable only R-2 reagent)

Skin corrosion/irritation: Category 1 (applicable only R-1 reagent)

Serious eye damage/eye irritation: Category 1 (applicable only R-1 reagent)

For those health hazards not listed above are not classified or classification not possible (no data for GHS classification available)

Environmental hazards: Classification not possible (no data for GHS classification available)

[GHS labeling elements]



[Signal word]

Danger

[Hazard statements]

Harmful if swallowed (applicable only R-2 reagent)

Causes severe skin burns and eye damage. (applicable only R-1 reagent)

Causes serious eye damage. (applicable only R-1 reagent)

[Precautionary statements]

Keep out of reach of children and store in the dry and dark place at room temperature.

Carefully read instructions before use and do not use for other purposes.

Wear personal protective equipment if necessary.

Do not inhale reagents.

Wash contaminated clothing.

Wash hands thoroughly before and after handling.

Avoid release to the environment.

3. Composition/ information on ingredients

Discrimination of single substance or mixture: Mixture

Reagent name	R-1 reagent		R-2 reagent	
	Chemical name	Boiling stone (Aluminum oxide)	Potassium picrate	Other (not regulated)
Content	90 - 99 %	1 - 4.9 %	1 - 4.9 %	90 - 99 %
Chemical formula	HOSO ₂ NH ₂	Al ₂ O ₃	(NO ₂) ₃ C ₆ H ₂ OK	—
METI No. (reference number under CSCL in Japan)	(1)-402	—	(3)-824	—
CAS No.	5329-14-6	1344-28-1	573-83-1	—

4. First-aid measures

If reagents or test solution;

Enter in eyes: Immediately rinse 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 ingested or in case any symptoms appear after above measures, immediately get medical advice or treatment. Especially in case ingested reagents or test solutions, immediately 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.

Do not contact with eyes and skin.

Concentrated waste solutions should not be released into sewer or rivers.

7. Handling and storage

Handling: Care should be made so that reagents will not contact with eyes or skin and to avoid ingestion. Because The pH level of the test solution after adding R-1 reagent will be below 2 of acid, and the final solution for measurement after adding R-2 reagent will be 12 of alkali.

Attention not causing burns with heated test materials.

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

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

8. Exposure controls and personal protection

Administrative control level

Working environment standard: Not established

Occupational exposure limits

Japan Society for Occupational health: Not established

ACGIH (TLVs): Not established

OSHA (PEL): Not established

Protective equipment: Recommended to wear protective glasses and gloves

9. Physical and chemical properties

Physical state:	R-1: powder reagent	56 g x 1 poly-bottle in a poly bag
	R-2: powder reagent	0.5 g x 40 poly-tubes in aluminum laminated packaging
Color:	R-1: white,	R-2: yellow
Odor:	R-1: no odor,	R-2: no odor
pH:	Test solution after the addition of R-1 reagent: ≤ 2	
	Final solution for measurement : ≥ 12	

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

10. Stability and reactivity

Avoid leaving in a place where high temperature, humid or under direct sunlight.

No data on flashpoint, ignition point, explosion limits or dangerous decomposition product is available.

Stable under normal use conditions

Note that isolated potassium picrate may explode due to severe heating or strong impact.

11. Toxicological information

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

R-1 reagent

Sulfamic acid:

Acute toxicity:

Oral-rat: LD₅₀ = 3,160 mg/kg, Oral-mouse: LD₅₀ = 1,312 mg/kg, Intraperitoneal-rat: LD₅₀ = 100 mg/kg

Skin corrosion/ irritation:

Rabbit 500 mg/24Hr Severe

Serious eye damage/ eye irritation:

Rabbit 250 µg/24 Hr Severe, Rabbit 20 mg moderate (RTECS)

Other data: Not available

Boiling stone (Aluminum oxide):

Acute toxicity:

Oral-rat: LD₅₀ > 5,000 mg/kg (IUCALID (2000)), Intraperitoneal-mouse: LD₅₀ > 3,600 mg/kg (RTECS)

Carcinogenicity: ACGIH classifies as A4

Specific target organ toxicity (single exposure):

It is reported that irritating to upper airways (Al₂O₃ powder) (ICSC, 2000)

Specific target organ toxicity (repeated exposure):

Lung fibrosis was observed in occupational settings due to exposure by exposure of aluminum oxide.

(Al₂O₃ powder) (EHC, 1997)

Other data: Not available

R-2 reagent

Potassium picrate:

Acute toxicity (as Picric acid): Oral-cat: LDLo = 250 mg/kg, Oral-rabbit: LDLo = 120 mg/kg

Skin corrosion/ irritation:

Having subcutaneous absorption properties and the skin turns yellow if contact, headache, dizziness, and feeling of sickness, vomit and skin inflammation.

Serious eye damage/ eye irritation:

Irritating to mucous membranes and may cause injury of cornea if enters in eyes.

Other data: Not available

GHS classifications as a mixture of each R-1 and R-2 reagents are shown below.

[Acute toxicity (oral)]

R-1 reagent: Not classified based on application of the additive equation.

R-2 reagent: Classified as Category 4 (Warning, Harmful in swallowed) based on application of the additive

equation.

[Skin corrosion/ irritation]

R-1 reagent: pH \leq 2; Classified as Category 1 (Danger, Causes severe skin burns and eye damage.)

R-2 reagent: Not classified because; Potassium picrate corresponds to Category 2, however its content is less than 10%.

[Serious eye damage/ eye irritation]

R-1 reagent: pH \leq 2; Classified as Category 1 (Danger, Causes serious eye damage.)

[Specific target organ toxicity (single exposure)]

R-1 reagent contains boiling stone.

Aluminum oxide, which is one of constituent of boiling stone, is Category 3 (respiratory irritation.), however boiling stone is a solid with a globular shape and it is considered low potential for respiratory irritation.

[Specific target organ toxicity (repeated exposure)]

Classification not possible. Boiling stone is a solid with a globular shape and it is considered low potential for respiratory irritation or inhalation toxicity

[Acute toxicity (dermal)], [Respiratory or skin sensitization], [Germ cell mutagenicity], [Carcinogenicity], [Reproductive toxicity], [Aspiration hazard]

Classification is not possible because of data lack.

12. Ecological information

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

R-1 reagent: Sulfamic acid, Boiling stone (Aluminum oxide): No eco-toxicological information available.

R-2 reagent: Potassium picrate: No eco-toxicological information available.

GHS classifications as a mixture of each R-1 and R-2 reagents are shown below.

[Hazardous to the aquatic environment, short-term (acute)],

[Hazardous to the aquatic environment, long-term (chronic)]

Classification is 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

The pH level of the test solution after adding R-1 reagent will be below 2 of acid, and the final solution for measurement after adding R-2 reagent will be 12 of alkali.

In addition, by the decomposition of R-1 reagent during distillation, ammonium nitrogen of up to ca. 250mg per measurement is generated in the test solution.

In case high concentration of cyan is detected from the test solutions, attention released gases after the neutralization. Always dispose of in accordance with 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 number	3316
Proper shipping name:	Chemical Kit (Chemical measurement kit)
UN classification:	Class 9 (miscellaneous dangerous substances and articles)
Packing group:	II
Civil Aeronautics Act:	Same as above. Applicable as Limited Quantities of Dangerous Goods.
Fire Service Act:	Not applicable
Total weight of the product:	ca.160 g/kit

15. Regulatory information

Poisonous and Deleterious Substances Control Act: Not applicable

(This product is a preparation and is not applicable as a deleterious substance under the Act).

PRTR Act: Not applicable

Industrial Safety and Health Act: Applicable

R-1 reagent contains more than 1% of aluminum oxide.

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

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

R-2 reagent contains potassium picrate and is applicable as "No.1 explosive substances in the cabinet order appended table 1(dangerous substances)".

Water Pollution Control Act: Applicable

Ammonium nitrogen is produced in the test solution by the decomposition of the R-1 reagent during distillation.

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

Sewerage Act: Applicable.

Ammonium nitrogen is produced in the test solution by the decomposition of the R-1 reagent during distillation.

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

Waste Disposal and Cleaning Act: Applicable

Since the pH level of the test solution after adding R-1 reagent will be below 2 of acidic, and the final solution for measurement will be 12 of alkali, both are considered to be Special Controlled Industrial Waste under applicable Act.

16. Other information

Reference literature

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Koukuu Kikenbutsu Yusou Houreisyu, Ed. MLIT, HOUBUN SHORIN CO., LTD. (2021)

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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.