Safety Data Sheet

Reference No. 2390

Issue: 9th January 1996
Revision: 1st September 2015

1. Chemical product and company identification

Product name Reagent Set for Water Analyzer Boron (Reagent No.39) Model LR-B

Company name KYORITSU CHEMICAL-CHECK Lab., Corp.
Address 37-11, Den-enchofu 5-chome, Ota-ku, Tokyo 145-0071, Japan
Tel +81-3-3721-9207
Fax +81-3-3721-0666
Person in charge Takashi NAGAI

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:
Toxic to reproduction Category 2 (applicable only R-1 reagent)
Specific target organ toxicity (repeated exposure):
Category 2 (liver) (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:
Hazardous to the aquatic environment - Acute: Category 3 (applicable only R-1 reagent)
Hazardous to the aquatic environment - Chronic: Category 3 (applicable only R-1 reagent)
Harmful effects on the ozone layer: Classification not possible (no data for GHS classification available)

[GHS labeling elements**]**

[Signal word**]**
Warning

[Hazard statements**]**
Suspected of damaging fertility or the unborn child. (applicable only R-1 reagent)
May cause damage to kidneys through prolonged or repeated exposure. (applicable only R-1 reagent)
Harmful to aquatic life. (applicable only R-1 reagent)
Harmful to aquatic life with long lasting effects. (applicable only R-1 reagent)

[Precautionary statements**]**
Keep out of reach of children and store in the cool, dry and dark place.
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 well 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	Ethylenediamine-N,N,N',N'- tetraacetic acid disodium salt dihydrate	Buffering agent	8-Hydroxy-1-(salicylidene amino)-3,6-naphthalene disulfonic acid disodium salt (Azomethine H)	Buffering agent
Content	< 10%	> 90%	< 10%	> 90%
Chemical formula	$C_{10}H_{14}N_2Na_2O_8 \cdot 2H_2O$	—	$C_{17}H_{11}NO_8S_2Na_2$	—
METI No. (reference number under CSCL in Japan)	(2)-1265	—	—	—
CAS No.	6381-92-6	—	32266-60-7	—

4. First-aid measures

If reagents or test solutions;
Enter in eyes: Immediately rinse eyes thoroughly.
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.

5. Fire-fighting measures

Extinguishing methods: Cut off ignition sources and extinct by a suitable media.
Suitable extinguishing media: Water (mist), powder, carbon dioxide, 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 or skin.

7. Handling and storage

Handling: Care should be made so that reagents will not contact with eyes or skin, and avoid ingestion.
Especially for outdoor use, ensure to bring back reagents, waste solutions after the measurement, and the 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: 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	0.3 g x 25 poly-tube in aluminum laminated packaging
	R-2: Powder reagent	0.3 g x 25 poly-tube in aluminum laminated packaging
Color:	R-1: White, R-2: Orange	
Odor:	No odor	
pH:	6	

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 each substance are shown below.

R-1 reagent:

Ethylenediamine-N,N,N',N'-tetraacetic acid disodium salt dehydrate:

Acute toxicity: Oral-mouse LD_{50} = ca 2,000 mg/kg, Oral-rat LD_{50} = ca 2,000 mg/kg (calculated value)
It is reported that calcium deficiency and hypocalcemia are induced in humans by excessive intake.

Local effects: The substance is applied for clinical use and is considered as having low irritation/ corrosion potential.
Powders irritate to eyes, skin and airways.

Skin sensitization: Negative in a guinea pig study (10% solution as a 3Na salt).

Chronic/long-term toxicity:
Diarrhea, decreased hemoglobin, prolonged clotting time were confirmed in a rat repeated dose oral study.

Carcinogenicity: Negative in mouse and rat feeding studies: 7,500 ppm/ 103weeks (as 3Na salt)

Germ cell mutagenicity: Negative in an Ames, positive in a mouse micronucleus (more than 5 mg/kg) and in a mouse lymphoma gene mutation (more than 0.00252 mol/L) studies.

Teratogenicity: Oral-rat, 1,000 mg/kg/day, 7-14days study: Diarrhea in mother animal but teratogenicity was negative.
Oral-rat, 2% (0-21 days), 3% (6-14 or 6-21 days): Caused diarrhea in mother animal. Palatoschisis, atrophia and loss of chin, and twist tail were confirmed in unborn children.

Reproductive toxicity: Oral-rat, 2% (0-21 days), 3% (6-14 or 6-21 days): Caused diarrhea in mother animal. Palatoschisis, atrophia and loss of chin, and twist tail were confirmed in unborn children.

Other data: Not available.

R-2 reagent:

Azomethine H: No toxicological information is available.

GHS classifications as mixtures are shown below.

R-1 reagent:

[Acute toxicity (oral)]
Not classified based on application of the additive equation of LD_{50} (rat) values of each ingredient.

[Reproductive toxicity]
Classified as Category 2 (Warning, Suspected of damaging fertility or the unborn child.) because Category 2 contains more than or equal to 3%.

[Specific target organ toxicity (repeated exposure)]
Classified as Category 2 (Warning, May cause damage to kidneys through prolonged or repeated exposure.) because Category 1 (kidneys) contains 1 to 10%.

[Acute toxicity (dermal)], [Skin corrosion/ irritation], [Serious eye damage/ eye irritation], [Germ cell mutagenicity], [Carcinogenicity], [Specific target organ toxicity (single exposure)], [Specific target organ toxicity (repeated exposure)], [Aspiration hazard]
Classification is not possible due to not enough data available.

R-2 Reagent:

[Acute toxicity (oral)]

Not classified based on application of the additive equation of LD_{50} (rat) values of each ingredient.

[Acute toxicity (dermal)]

Not classified based on application of the additive equation of LD_{50} (rat) values of each ingredient.

[Skin corrosion/ irritation], [Serious eye damage/ eye irritation], [Respiratory or skin sensitization], [Germ cell mutagenicity], [Carcinogenicity], [Reproductive toxicity], [Specific target organ toxicity (single exposure)], [Specific target organ toxicity (repeated exposure)], [Aspiration hazard]
Classification is not possible due to not enough data available.

12. Ecological information

No data on mixture is available. Data on each substance are shown below.

R-1 reagent:

Ethylenediamine-N,N,N',N'-tetraacetic acid disodium salt dehydrate:

Persistence/ degradability: Aerobic biodegradability: Not degradable
Bioaccumulation: Low bioaccumulation potential.
Eco-toxicity: Fish: 96-h LC_{50} = 41 mg/L (Blue gill), 59.3 mg/L (Fathead minnow), 246 mg/L (Medaka)
Algae: 8 days EC_{50} = 11 mg/L (*Scenedesmus quadricauda*), 72-h EC_{50} = 3.34 mg/L (*Selenastrum capricornutum*), 76 mg/L (*Microcystis aeruginosa*)
Crustacea: 48-h EC_{50} = 65.0 mg/L (*Daphnia magna*)

R-2 reagent:

Azomethine H: No eco-toxicological information is available.

GHS classifications as mixtures are shown below.
R-1 reagent:

[Hazardous to the aquatic environment Acute]

Classified as Category 3 (Harmful to aquatic life.) based on application of the additive equation.

[Hazardous to the aquatic environment Chronic]

Classified as Category 3 (Harmful to aquatic life with long lasting effects.) based on application of the additive equation.

R-2 reagent:

[Hazardous to aquatic environment- Acute], [Hazardous to aquatic environment- Chronic]:
Classification is not possible due to not enough data available.
[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

Always dispose of in accordance with local regulations.

14. Transport information

In addition to precautionary measures regarding the handling and the storage, avoid rough handling that may cause damaging the containers. It is recommended to ship by air because of the storage under high temperature for long period of time may lead to deterioration.

UN classification and number: Not applicable
Civil Aeronautics Act: Not applicable
Poisonous and Deleterious Substances Control Act: Not applicable
Fire Service Act: Not applicable
Total weight of the product: ca.110 g/kit

15. Regulatory information

PRTR Act: Not applicable
Industrial Safety and Health Act: Not applicable

16. Other information

Reference literature

15,911 no Kagaku Shouhin, The Chemical Diary Co., Ltd. (2011)
NITE, GHS Classification, ID361
Material Safety Data Sheet No.N001, Dojin Laboratories. (2010.09.27)
Material Safety Data Sheet No.A015, Dojin Laboratories. (2009.10.15)
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-Labelling 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.