Safety Data Sheet

Reference No. 1048

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1. Chemical product and company identification

Product name PACKTEST Total Residual Chlorine [Standard Type] Model WAK-T • ClO

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 Hiroko HONDA
Recommended uses and restrictions Reagent for water quality measurement

2. Hazards identification

Most important hazards information: Irritation
Its effects: Harmful if inhaled or ingested. Contact with eyes, skin and mucous causes irritation.
Long-term exposure may cause discomfort feeling, nausea or headache.

[GHS Classification**]**
Physical hazards: Classification not possible (no data for GHS classification available)
Health hazards: 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**]**
None

[Signal word**]**
None

[Hazard statements**]**
None

[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 thoroughly before and after handling.
Avoid release to the environment.

3. Composition/ information on ingredients

Discrimination of single substance or mixture: Mixture

Reagent name	K-1 reagent			
Chemical name	N,N-Diethyl-1,4-phenylene diamine sulfate	Potassium Iodide	Extender	Polyethylene
Content	< 1%	<1%	< 10%	> 89%
Chemical formula	$(C_2H_5)_2NC_6H_4NH_2 \cdot H_2SO_4$	KI	-	$(C_2H_4)n$
METI No. (reference number under CSCL in Japan)	(3)-243 (1)-430	(1)-439	-	(6)-1
CAS No.	6283-63-2	7681-11-0	—	9002-88-4

4. First-aid measures

If reagents or developed sample;
Enter in eyes: Immediately rinse eyes with water 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 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.

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: Not established
ACGIH (TLVs): Not established
OSHA (PEL): Not established

Protective equipment: Recommend to wear protective glasses and gloves

9. Physical and chemical properties

Physical state: Tube containing powder reagent
1.1 g x 50 tubes/kit (5 tubes per one aluminum laminated packaging)
Color: White (powder), semi-transparent (polyethylene tube)
Odor: No odor
pH: 7

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.

N,N-Diethyl-1,4-phenylenediamine sulfate:
Acute toxicity:
Oral: Rats LDL_0 100 mg/kg, trembling, convulsion, epilepsia, rigor (RTECS)
Mouse LDL_0 300 mg/kg, rigor, methemoglobinemia (RTECS)
Serious eye damage/eye irritation: Rabbit Mild 500mg/24H (RTECS)
Other data: Not available

Potassium iodide:
Acute toxicity: Classification is not possible based on the following data.
Oral: Mouse LDLo 1,862 mg/kg (PATTY (5th, 2001))
Skin corrosion/irritation: No data available.
Serious eye damage/eye irritation: Category 2B is based on the following data.
Rabbit's cornea test of 3% potassium iodide solution causes only slight reaction. 17 in 100 samples recognized irritation. (HSDB (2006))
Respiratory sensitization: No data.
Skin sensitization: Classification is not possible because of data lack.
Germ cell mutagenicity: Classification is not possible because of data lack.
Carcinogenicity: Classification is not possible because of data lack.
Reproductive toxicity: Category 1B and additional category on effects on or via lactation are based on the following data.
The intake of excessive amount of iodine causes human thyroid gland deficiency, and it may cause sexual functions disorder such as abnormality of menstruation as second effect. There is a knowledge that absorbed iodine is excreted in breast milk, iodine that transmits to newborn infants through breast milk may cause developmental impairment of infants. As the evidence of overexposure of iodine compounds about effects on human reproductive system is insufficient, the effect on breast feeding is added as category 1B.
Specific target organ toxicity (Single exposure): Category 1 (Thyroid) is based on the following data.
The acute intake of excessive amount of iodine causes a transient decline of production of human thyroid hormone.(ATSDR (2004))
Specific target organ toxicity (Repeated exposure): Category 1 (Thyroid, Skin, Systemic Toxicity) is based on the following data.
Proliferative skin lesions on face, scalp, arm and body were developed for pulmonary disease patients who have been receiving the drug include the substance. And oral intake caused drug rash by iodine to the patients. (ATSDR (2004))
Enlargement of the thyroid gland and hypothyroidism were developed for patients who has been receiving the drug include the substance. (ATSDR (2004))
Meanwhile, there are reports of overactive thyroid gland. (CICAD 72 (2009)、JECFA 24 (1989))
Long-term ingestion of iodide or serious side effects may cause iodine intoxication. (HSDB (2006))
In addition to the symptoms associated with thyroid, irritation of eyes, mouth and respiratory, asthma, gastric inflammation and general debility were caused by iodine intoxication. (HSDB (2006))
There are some reports of fever, which is considered on the basis of immune function in patients who has ingested orally. (CICAD 72 (2009)) It is difficult to specify target organs from these reports.

Therefore, classification is set to Category 1(systemic toxicity)
Other data: Not available

Polyethylene:
Acute toxicity:
Oral: Rat LD_{50} > 7,950 mg/kg (used 7,950 mg/kg for the calculation of ATEmix below)
Carcinogenicity: IARC Group 3 (not classifiable as to carcinogenicity to humans).
Other data: Not available

GHS classifications as a mixture are shown below.
[Acute toxicity (oral)]
Not classified based on application of the additive equation of LD_{50} values of each ingredient.
[Serious eye damage/ eye irritation]
Contains <3% of category 2B; Not Classified.
[Reproductive toxicity]
Contains <0.3% of category 1B; Not Classified.
[Specific target organ toxicity (single exposure)]
Contains <1% of category 1; Not Classified.
[Specific target organ toxicity (repeated exposure)]
Contains <1% of category 1; Not Classified.

[Acute toxicity (dermal)], [Skin corrosion/ irritation], [Respiratory or skin sensitization], [Germ cell mutagenicity], [Carcinogenicity], [Aspiration hazard]
Classification is not possible because of data lack.

12. Ecological information

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

Potassium iodide:
Hazards to the aquatic environment, acute: Classification is not possible because of data lack.
Hazardous to the aquatic environment, chronic: Classification is not possible because of data lack.
Other data: Not available.
N,N-Diethyl-1,4-phenylenediamine sulfate and Polyethylene:
No eco-toxicological information is available.
Polyethylene: No eco-toxicological information is available.

GHS classifications as a mixture are shown below.
[Hazards to the aquatic environment, short-term (Acute)].
[Hazardous to the aquatic environment, long-term (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

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
Civil Aeronautics Act:	Not applicable
Poisonous and Deleterious Substances Control Act:	Not applicable
Fire Service Act:	Not applicable
Total weight of the product:	ca. 140 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)
Material Safety Data Sheet No.JW042764, Wako Pure Chemical Industries, Ltd. (2007.09.18)
NITE, GHS Classification, ID H27-B-019/C-040B_P Potassium iodide (2016)
Safety Data Sheet No.32351, KANTO CHEMICAL CO., INC (2016.06.20)
Material Safety Data Sheet No.051110033, TOSOH CORPORATION (2004.07.09)
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