

SAFETY DATA SHEET

 PRODUCT NAME **KEM AQUA Titrant TR-1**

 Date of issue **06/26/2012**

 Date of revision **-**
1 Identification of the substance or mixture and the supplier

Product name: **KEM AQUA Titrant TR-1**
 Name of supplier: **Kyoto Electronics Manufacturing Co., Ltd.**
 Address: **68 Ninodan-cho, Shinden, Kisshoin, Minami-ku, Kyoto, Japan**
 Division: **Quality Assurance Department**
 Phone: **+81-75-691-4121**
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 MSDS No. **GHS-0064E**

2 Hazard identification
GHS hazard class and category

Physical hazards;	Flammable liquids:	Not classified
	Pyrophoric liquids:	Not classified
Health hazards;	Acute toxicity (oral):	Not classified
	Skin corrosion/irritation:	Category 1A
	Eye damage/irritation:	Category 1
	Sensitization Respiratory or Skin:	Category 1(Skin)
	Specific target organ systemic toxicity (single exposure):	Category 1 (Respiratory system)
	Specific target organ systemic toxicity (repeated exposure):	Category 1 (Respiratory system, Thyroid gland)

Other hazard identification are not shown above because of the reasons below;
 Not applicable / Classification not possible

Label elements
Pictogram

Signal word:
Danger
Hazard statements:

Causes severe skin burns and eye damage
 May cause an allergic skin reaction
 Cause damage to organs (Respiratory system)
 Cause damage to organs (Respiratory system, Thyroid gland) through prolonged or repeated exposure

Precautionary statements:

Prevention	<p>Wear protective gloves and eye/face protection. Wash thoroughly after handling.</p> <p>Contaminated work clothing should not be allowed out of the workplace.</p> <p>Do not eat, drink or smoke when using this product. Do not breathing dust/fume/gas/mist/vapours/spray.</p>
Response	<p>IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation or rash occurs, seek medical advice/attention.</p> <p>IF IN EYE: Rinse cautiously with water for several minutes. Remove contact lenses. If present and easy to do. Continue rinsing. Immediately call a POISON CENTRE or doctor/physician.</p> <p>IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or doctor/physician.</p> <p>If exposed: Call a POSON CENTRE or doctor/physician.</p> <p>Get medical attention/advice if you feel unwell.</p>
Storage	Store locked up.
Disposal	Dispose of contents and container in accordance with regulation.

3 Composition/Information on ingredients

Substance/Mixture: Mixture

Ingredient name	Composition (%)	Chemical formula	CAS No.
Diethylene glycol monoethyl ether	70-80	C6H14O3	111-90-0
Imidazole	10-20	C3H4N2	288-32-4
Iodine	3-8	I2	7553-56-2
Sulfur dioxide	3-8	SO2	7446-09-5

4 First-aid measures

Inhalation:	Move victim to fresh air. If irritation persists, transport to a hospital immediately.
Skin contact:	Wash affected area with soap and water. Get medical attention if irritation occurs.
Eye contact:	In case of contact with eyes, irrigate with water for 15 minutes, carefully separating the eyelids to ensure that water reaches all parts. Seek medical advice, especially if irritation occurs or symptoms persist.
Ingestion:	Rinse mouth, give plenty of water to dilute the substance. Transport to a hospital immediately.
Most important symptoms:	No specific remarks.
Protections for first-aid persons:	In case of first-aid, rescuer should wear proper protections according to situations.

 5 Fire-fighting measures

Extinguishing media:	Carbon dioxide, dry chemical powder, alcohol resistant foam, water
Incompatible extinguishing media:	Pressurized water
Specific hazards arising from the chemical (and with regard to fire-fighting measures):	When burned, product forms smoke and toxic fumes, gases or vapours.
Specific fire-fighting measures:	Fight the fire from a windward direction.
Special protective equipment and precautions for fire-fighters:	Fire fighters should wear an approved self-contained breathing apparatus and full protective clothing.

 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Wear proper protective equipment. If indoors, keep the area ventilated in use. If outdoors, must be used at windward side. Let the person evacuate from downwind side.
Environmental precautions:	Attention should be given not to cause damage to the environment by flowing of spillage to rivers.
Measures and materials for containment and clean up:	In case of leakage, collect in an airtight container and dispose of it properly as industrial waste.

 7 Handling and storage

Precautions for safe handling:	
Countermeasure technique(s):	Use only in well-closed facilities or local exhaust area. Remove sources of sparks and ignition. Take precautionary measures against static discharges.
Preventive measures:	The working area must be ventilated well in use. Emitted vapour or dust must not be breathed.
Safety measures/incompatibility:	Do not shock, overturn, drop, or drag containers.
Conditions for safe storage, including any incompatibilities:	
Recommendation for storage:	Keep away from direct sunlight. Must be stored indoors. The room must be kept well-ventilated. Must be stored under room temperature. In case of storage, air tightened container must be used.
Recommendation on container and packaging materials:	Glass

 8 Exposure controls/Personal protection

Appropriate engineering controls:	Keep source tightly closed or install local exhaust ventilation. Provide shower and vanity unit nearby and make clear the location of these.
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	Diethylene glycol monoethyl ether	Imidazole	Iodine	Sulfur dioxide
Control value	Not established.	Not established.	Not established.	Not established.
Adopted value ACGIH	Not established.	Not established.	STEL: 0.1 ppm (2004)	TWA: 2 ppm STEL: 5 ppm(2004)

Individual protection measures, such as personal protective equipment (PPE):

Respiratory protector:	Wear positive pressure self-contained breathing apparatus (SCBA). Respirator for organic vapour.
Hand protection:	Wear impervious glove made from chloroprene, as appropriate.
Eye/face protection:	Wear protective eyeglasses or chemical safety goggles.
Skin and body protector:	To prevent any contact, wear impervious clothing such as apron, boots, or whole-body suits made from chloroprene, as appropriate.

9 Physical and chemical properties

Appearance, color:	Blackish brown and clear liquid
Odor:	Characteristic odor
pH	No data available
Melting point/freezing point	No data available
Boiling point	No data available
Flash point	111C (C.O.C)
Auto-ignition temperature:	No data available
Upper/lower flammability or explosive limits:	No data available
Vapour pressure:	No data available
Vapour density (Air = 1):	No data available
Specific gravity (Density):	1.06 (20C)
Solubility	Easily soluble in water
Octanol/water partition coefficient (log Pow)	No data available
Decomposition temperature:	No data available
Viscosity:	11.065cst (26C)

10 Stability and reactivity

Chemical stability:	Stable under normal storage conditions.
Possibility of hazardous reactions:	Flammable
Conditions to avoid:	Not specified
Incompatible materials:	No data available
Hazardous decomposition products:	No data available

11 Toxicological information

No data for this product. For reference, the information of each ingredient is as follows.

	Diethylene glycol monoethyl ether	Imidazole	Iodine	Sulfur dioxide
Acute toxicity -oral LD50(mg/kg)	(rat) 5500	(rat) 960	(rat) 14000	-
-inhalation LC50(ppm)	-	-	-	(rat) 965
Skin corrosion/irritation	Mild	Corrosive	Category2	Classification not possible
Eye damage/irritation	Moderate	Severe	Category2A-2B	Category2A (human)
Respiratory or Skin Sensitization	-	-	Category1 (Skin)	Classification not possible
Germ cell mutagenicity	Negative	Negative	Classification not possible	Classification not possible
Carcinogenicity	-	-	Classification not possible	A4(ACGIH)
Toxic to reproduction	-	-	Classification not possible	Classification not possible
STOT- single exposure	-	-	Category3	Category1
STOT- repeated exposure	-	-	Category1	Category1
Aspiration toxicity	-	-	Classification not possible	Classification not possible

12 Ecological information

No data for this product. For reference, the information of each ingredient is as follows.

	Diethylene glycol monoethyl ether	Imidazole	Iodine	Sulfur dioxide
Biotransportability	No data available	-	No data available	No data available
Persistence and degradability	No data available	Degradable (BOD: 90%)	No data available	No data available
Bioaccumulative potential	No data available	-	No data available	No data available
Ecotoxicity LC50(mg/L)	No data available	284 (48H)	0.16 (crustaceas: 48H)	No data available
Fish toxicity	No data available	-	No data available	No data available

13 Disposal considerations

Contact a licensed professional waste disposal service to dispose of this material. Comply with all country, national and local regulations. Do not dump this product into sewers, on the ground or into any body of water.

14 Transport information

Basic classification information for the transporting/shipment:

Sea; Not controlled under IMDG' s regulations.

Air; Not controlled under ICAO/IATA' s regulations.

Special precautions which a user needs to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises:

Protection from direct sun light in transportation, and confirm the container does not leak.

Carefully load it onto a transporter without dropping, overturning or damaging so that it will stably stays on the transporter.

15 Regulatory information

Follow all laws and regulations in your country.

16 Other information

Bibliography:

NITE GHS-DB
RTECS

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.