

# SAFETY DATA SHEET

PRODUCT NAME	<b>KEM AQUA Solvent KET</b>	Data of issue	6/11/2018
		Date of revision/ Last confirmation	10/9/2024

## 1. Identification of the substance or mixture and the supplier

Product name	KEM AQUA Solvent KET
SDS No.	GHS-0068E
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
Fax	+81-75-691-4127
Recommended uses and restrictions on use	
Recommended use	For analysis
Restrictions on use	When using for purposes other than those recommended, consult a specialist.

## 2. Hazard identification

GHS classification

Health hazards

Serious eye damage / Eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3(Narcotic effects)

GHS label elements

Hazard pictograms



Signal words

Warning

Hazard statements

H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.

Precautionary statement

Prevention

P261 Avoid breathing mist or vapor.  
P264 Wash skin thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/ protective clothing/ eye

Response	<p>protection/ face protection.</p> <p>P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.</p> <p>P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P337 + P313 If eye irritation persists: Get medical advice/ attention.</p>
Storage	<p>P403 + P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405 Store locked up.</p>
Disposal	P501 Dispose of contents/ container to an approved waste disposal plant.
Other hazards which do not result in classification	None known.

### 3. Composition/Information on ingredients

substance / mixture                      mixture

Components

No.	Chemical name	CAS No.	Concentration (% w/w)	ENCS / ISHL number
1	Propylene carbonate	108-32-7	50-60	5-524
2	2-(2-ethoxyethoxy)ethanol	111-90-0	30-40	2-422, 7-97
3	2-Pyrrolidone	616-45-5	5-15	5-112

### 4. First-aid measures

General advice	Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	<p>Consult a physician after significant exposure.</p> <p>If unconscious, place in recovery position and seek medical advice.</p>
In case of skin contact	<p>If skin irritation persists, call a physician.</p> <p>If on skin, rinse well with water.</p> <p>If on clothes, remove clothes.</p>
In case of eye contact	<p>Immediately flush eye(s) with plenty of water.</p> <p>Remove contact lenses.</p>

	Protect unharmed eye.
	Keep eye wide open while rinsing.
	If eye irritation persists, consult a specialist.
If swallowed	Keep respiratory tract clear.
	Do not give milk or alcoholic beverages.
	Never give anything by mouth to an unconscious person.
	If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	Causes serious eye irritation.
	May cause drowsiness or dizziness.
Notes to physician	Treat symptomatically.

## 5. Fire-fighting measures

Suitable extinguishing media	Carbon dioxide (CO <sub>2</sub> ) Dry sand Regular foam Vermiculite
Unsuitable extinguishing media	High volume water jet
Specific hazards during fire fighting	Do not allow run-off from fire fighting to enter drains or water courses.
Specific extinguishing methods	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	Use personal protective equipment.

## 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Use personal protective equipment. Remove all sources of ignition.
Environmental precautions	Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

## 7. Handling and storage

### Handling

Advice on protection against fire and explosion	Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.
Advice on safe handling	Take precautionary measures against static discharges. Keep away from fire, sparks and heated surfaces. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only in area provided with appropriate exhaust ventilation.
Avoidance of contact	No data available
Hygiene measures	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

### Storage

Conditions for safe storage	Keep in a well-ventilated place. Store at room temperature. To maintain product quality, do not store in heat or direct sunlight. Keep container tightly closed.
Further information on storage stability	No decomposition if stored and applied as directed.

## 8. Exposure controls/Personal protection

Threshold limit value and permissible exposure limits for each component in the work environment

Contains no substances with occupational exposure limit values.

### Personal protective equipment

Respiratory protection	Suitable respiratory equipment
Hand protection material	Protective gloves
Eye protection	Safety glasses
Skin and body protection	Protective suit

## 9. Physical and chemical properties

Physical state	Liquid.
Color	Light yellow, transparent
Odor	Irritating

Melting point / Freezing point	No data available
Initial boiling point and boiling range	No data available
Flammability (liquids)	No data available
Lower explosion limit and upper explosion limit / flammability limit	
Upper explosion limit / Upper flammability limit	No data available
Lower explosion limit / Lower flammability limit	No data available
Flash point	116.0 °C (Cleveland open cup)
Self-ignition	No data available
Decomposition temperature	No data available
pH	No data available
Autoignition temperature	No data available
Self-Accelerating decomposition temperature (SADT)	No data available
Viscosity	
Viscosity, kinematic	3.273 mm <sup>2</sup> /s
Solubility(ies)	
Water solubility	completely soluble
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Vapor pressure	No data available
Density and / or relative density Relative density	No data available
Density	No data available
Relative vapor density	No data available
Particle characteristics Particle size	No data available

## 10. Stability and reactivity

Reactivity	No decomposition if stored and applied as directed.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No decomposition if stored and applied as directed.
Conditions to avoid	No data available
Incompatible materials	No data available
Hazardous decomposition products	No data available

## 11. Toxicological information

Acute toxicity	Not classified based on available information.
propylene carbonate	

Acute oral toxicity	LD50 (Rat) >5,000 mg/kg
Acute inhalation toxicity	LC0 (Rat) 0.041 mg/L, Exposure time 8 h, Test atmosphere vapor
Acute dermal toxicity	LD50 (Rabbit) >20,000 mg/kg LD50 (Rabbit) >3,000 mg/kg
2-(2-ethoxyethoxy)ethanol	
Acute oral toxicity	LD50 (Rat) 5,540 mg/kg
Acute inhalation toxicity	LC50 (Rat) >1.39 mg/L, Exposure time 4 h, Test atmosphere dust / mist
Acute dermal toxicity	LD50 (Rabbit) 8,500 mg/kg
2-pyrrolidone	
Acute inhalation toxicity	LC50 (Rat) 6,500 mg/kg
Acute inhalation toxicity	LC50 (Rat) 0.061 mg/L, Exposure time 8 h, Test atmosphere vapor
Acute dermal toxicity	LD50 (Rabbit) >2,000 mg/kg
Skin corrosion/irritation	Not classified based on available information.
Product	May cause skin irritation in susceptible persons.
Serious eye damage/eye irritation	Causes serious eye irritation.
Product	Causes serious eye irritation. Severe eye irritation
propylene carbonate	Causes serious eye irritation.
2-(2-ethoxyethoxy)ethanol	Causes eye irritation.
2-pyrrolidone	Causes serious eye irritation.
Respiratory or skin sensitization	
Skin sensitization	Not classified based on available information.
Respiratory sensitization	Not classified based on available information.
Germ cell mutagenicity	Not classified based on available information.
Carcinogenicity	Not classified based on available information.
Reproductive toxicity	Not classified based on available information.
STOT-single exposure	May cause drowsiness or dizziness.
2-(2-ethoxyethoxy)ethanol	The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.
2-pyrrolidone	The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.
STOT-repeated exposure	Not classified based on available information.
Aspiration toxicity	Not classified based on available information.
Remarks	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may degrease the skin.

## 12. Ecological information

### Ecotoxicity

#### propylene carbonate

Toxicity to fish	LC50 (Cyprinus carpio (Carp)) >1,000 mg/L, Exposure time 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 (Daphnia magna (Water flea)) >1,000 mg/L, Exposure time 48 h Tested according to Directive 92/69/EEC.
Toxicity to algae/aquatic plants	EC50 (Desmodesmus subspicatus (green algae)) >900 mg/L, Exposure time 72 h

#### 2-(2-ethoxyethoxy)ethanol

Toxicity to fish	LC50 (Pimephales promelas (fathead minnow)) 9,650 mg/L, Exposure time 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 3,340 mg/L, Exposure time 48 h

#### 2-pyrrolidone

Toxicity to fish	LC50 (Brachydanio rerio (zebrafish)) 4,600-100,000 mg/L, Exposure time 96 h (OECD Test Guideline 203), GLP yes
Toxicity to daphnia and other aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 13.21 mg/L, End poinr Immobilization, Exposure time 48 h
Toxicity to algae/aquatic plants	EC50 (Desmodesmus subspicatus (green algae)) 4 mg/L, Exposure time 72 h

### Persistence and degradability

#### Biodegradability

propylene carbonate	rapidly biodegradable, Biodegradation 92 %, Exposure time 28 d (OECD Test Guideline 301C), GLP yes
2-(2-ethoxyethoxy)ethanol	rapidly biodegradable
2-pyrrolidone	Aerobic, rapidly biodegradable, Biodegradation 98 %, Exposure time 9 d

### Bioaccumulative potential

#### Bioaccumulation

propylene carbonate	Partition coefficient: n-octanol/water log Pow = - 0.41
2-(2-ethoxyethoxy)ethanol	Partition coefficient: n-octanol/water log Pow = - 0.54
2-pyrrolidone	Partition coefficient: n-octanol/water log Pow = - 0.71

Mobility in soil No data available

Hazardous to the ozone layer Not applicable

layer

Other adverse effects No data available

### 13. Disposal considerations

Waste from residues	Can be incinerated, when in compliance with local regulations. Send to a licensed waste management company.
Contaminated packaging	Empty remaining contents. Empty containers should be taken to an approved waste handling site for recycling or disposal. Dispose of contents/ container to an approved waste disposal plant.

### 14. Transport information

International Regulations	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable for product as supplied.
Domestic regulation	Please refer to the law and local regulations, etc. in each country
Special precautions for user	Not applicable

### 15. Regulatory information

### 16. Other information

Citations/References

- NITE-Gmiccs (National Institute of Technology and Evaluation)
- NITE-CHRIP (National Institute of Technology and Evaluation)
- Workplace Safety Site (Ministry of Health, Labor and Welfare)
- SDS from various upstream manufacturers

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.