SAFETY DATA SHEET

PRODUCT NAME **KEM AQUA Solvent MET**

Data of issue 6/11/2018

Date of revision/ Last confirmation 3/4/2025

1. Identification of the substance or mixture and the supplier

Product name	KEM AQUA Solvent MET
SDS No.	GHS-0065E
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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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

Physical hazards	
Flammable liquids	Category 2
Health hazards	
Acute toxicity / Oral	Category 4
Serious eye damage / Eye irritation	Category 2
Reproductive toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 1(Central nervous system, Visual organs, Systemic toxicity) Category 2(respiratory system) Category 3(Narcotic system)
Specific target organ toxicity (repeated exposure	Category 1(Central nervous system, Visual organs) Category 2(respiratory tract system)

GHS label elements

Hazard pictograms

Signal word	Danger
Hazard statements	H225 Highly flammable liquid and vapor. H302 Harmful if swallowed. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness. H360 May damage fertility or the unborn child. H370 Causes damage to organs (Central nervous system, Visual organs, Systemic toxicity). H371 May cause damage to organs (respiratory system). H372 Causes damage to organs (Central nervous system, Visual organs) through prolonged or repeated exposure. H373 May cause damage to organs (respiratory tract system) through prolonged or repeated exposure.
Precautionary statements	
Prevention	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P240 Ground and bond container and receiving equipment. P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment. P242 Use non-sparking tools. P243 Take action to prevent static discharges. P260 Do not breathe mist or vapors. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response	P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor. P337 + P313 If eye irritation persists: Get medical advice/ attention. P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage	P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P403 + P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.
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	Methanol	67-56-1	90-100	2-201
2	2-(Methylamino)pyridine	4597-87-9	1-10	8-(1)-3318
3	Sulfur Dioxide	7446-09-5	1-5	1-536

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	Call a POISON CENTER or doctor/physician if you feel unwell.
	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
In case of skin contact	No information available.
In case of eye contact	If eye irritation persists: Get medical advice/ attention.
	Remove contact lenses, if present and easy to do. Continue rinsing.
	Rinse cautiously with water for several minutes.
If swallowed	Rinse mouth.
	If swallowed, DO NOT induce vomiting.
	Take victim immediately to hospital.
Most important symptoms	Harmful if swallowed.
and effects, both acute and	Causes serious eye irritation.
delayed	May cause drowsiness or dizziness.
	May damage fertility or the unborn child.
	Causes damage to organs.
	Causes damage to organs through prolonged or repeated exposure.
Notes to physician	Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	Carbon dioxide (CO_2)
	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,	Use personal protective equipment.

protective equipment and emergency procedures	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

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

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Reference concentration / Permissible concentration	Basis
methanol	67-56-1	ACL OEL-M	200 ppm 200 ppm 260 mg/m^3	JP OEL ISHL JP OEL JSOH
	Further information: Group 2: Substances presumed to cause reproductive toxicity in			

	humans, Skin absorption			
		TWA STEL	200 ppm 250 ppm	ACGIH ACGIH
sulphur dioxide	7446-09-5	STEL	0.25 ppm	ACGIH

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	11.5 ℃
Self-Accelerating decomposition temperature (SADT)	No data available
Viscosity	
Viscosity, kinematic	0.83 mm^2/s
Solubility(ies)	
Water solubility	No data available
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	Harmful if swallowed.
Product	
Acute oral toxicity	Acute toxicity estimate 1,527 mg/kg (Calculation method)
Acute inhalation toxicity	Acute toxicity estimate > 20000 ppm (Calculation method), Exposure time 4 h, Test atmosphere gas
methanol	
Acute oral toxicity	LD50 1,400mg/kg
Acute inhalation toxicity	LC50 (Rat) 64,000ppm，Exposure time 4 h, Test atmosphere vapor LC50 (Rat) 145,000ppm，Exposure time 1 h, Test atmosphere dust / mist
Acute dermal toxicity	LDLo 393mg/kg
sulphur dioxide	
Acute inhalation toxicity	LC50 (Rat) 593 - 1319ppm，Exposure time 4 h, Test atmosphere gas
Skin corrosion/irritation	Not classified based on available information.
Product	May cause skin irritation and/or dermatitis.
2-(methylamino)pyridine	Skin irritation
Serious eye damage/eye irritation	Causes serious eye irritation.
Product	Causes serious eye irritation.
methanol	Causes eye irritation.
2-(methylamino)pyridine	Eye irritation.
sulphur dioxide	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	May damage fertility or the unborn child.
methanol	Presumed human reproductive toxicant
STOT-single exposure	May cause drowsiness or dizziness. Causes damage to organs (Central nervous system, Visual organs, Systemic toxicity). May cause damage to

	organs (respiratory system).
methanol	Target Organs Systemic toxicity, Central nervous system, Visual organs The substance or mixture is classified as specific target organ toxicant, single exposure, category 1. The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.
sulphur dioxide	Target Organs Respiratory organs The substance or mixture is classified as specific target organ toxicant, single exposure, category 1.
STOT-repeated exposure	Causes damage to organs (Central nervous system, Visual organs) through prolonged or repeated exposure. May cause damage to organs (respiratory tract system) through prolonged or repeated exposure.
methanol	Target Organs Central nervous system, Visual organs The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.
sulphur dioxide	Target Organs Respiratory organs The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.
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	
methanol	
Toxicity to fish	LC50 (Lepomis macrochirus (Bluegill sunfish)) 15,400 mg/L, Exposure time 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 (Daphnia magna (Water flea)) > 10,000 mg/L, Exposure time 48 h
Toxicity to algae/aquatic plants	EC50 (Chaetoceros calcitrans) > 10,000 - < 20,000 mg/L, Exposure time 96 h
Toxicity to fish (Chronic toxicity)	NOEC (Oreochromis mossambicus) 23.75 mg/L, End point Growth inhibition Exposure time 90 Days
Persistence and degradability	

Biodegradability	
methanol	Biochemical oxygen demand rapidly biodegradable, Biodegradation 92 %, Exposure time 14 d
Bioaccumulative potential	
Bioaccumulation	
methanol	Species Cyprinus carpio (Carp), Bioconcentration factor (BCF) < 10, Exposure time: 72 h Partition coefficient: n-octanol/water log Pow = - 0.77
Mobility in soil	No data available
Hazardous to the ozone layer	Not applicable
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

IATA-DGR

UN / ID No.	UN1230
Proper shipping name	Methanol（solution）
Class	3
Subsidiary risk	6.1
Packing group	Ⅱ
Labels	Flammable Liquids, Toxic
Packing instruction (cargo aircraft)	364
Packing instruction (passenger aircraft)	352

IMDG-Code

UN No.	UN1230
Proper shipping name	METHANOL（solution）
Class	3

Subsidiary risk	6.1
Packing group	Ⅱ
Labels	3（6.1）
EmS Code	F-E，S-D
Marine pollutant	no

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: The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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.