1. IDENTIFICATION

Product Identifier	UV Primer GM-1
Product code	SPC-0541
Recommended use and restriction use	Primer for use in UV cure ink for ink jet printer
Supplier name	MIMAKI ENGINEERING CO., LTD.
Address	2182-3 Shigeno-otsu, Tomi-shi, Nagano 389-0512 JAPAN
Telephone number	+81-268-64-2413
Importer / Distributor Information	MIMAKI SINGAPORE PTE. LTD. 31 Kaki Bukit Road 3 Singapore 417818 TechLink #02-03 +65-6508-2789
Emergency telephone number	+65 3165 2217 (within Singapore only) +65 3158 1074

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Physical and chemical hazards	Flammable liquids Category 2
Health hazards	Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 2A Carcinogenicity Category 1A Reproductive toxicity Category 1A Specific target organ toxicity (single exposure) Category 3(narcotic effect respiratory tract irritation) Specific target organ toxicity (repeated exposure) Category 1(liver) Specific target organ toxicity (repeated exposure) Category 2 (central nervous system)
Environmental Hazards	Hazard to the aquatic environment (long-term hazard) Not classified

GHS LABEL ELEMENTS

Pictograms

Signal Word	Danger
Hazard Statements	H225 Highly flammable liquid and vapour H315 Causes skin irritation H319 Causes serious eye irritation H350 May cause cancer H360 May damage fertility or the unborn child H335 May cause respiratory irritation H336 May cause drowsiness or dizziness

	H372 Causes damage to organs(liver) through prolonged or repeated exposure H373 May cause damage to organs(central nervous system) through prolonged or repeated exposure
Precautionary Statements	
Prevention	Obtain special instructions before use(P201) Do not handle until all safety precautions have been read and understood(P202) Keep away from heat, sparks, open flames and hot surfaces. No smoking.(P210) Keep container tightly closed.(P233) Ground/bond container and receiving equipment(P240) Use explosion-proof electrical/ ventilating/ lighting/ equipment(P241) Use only non-sparking tools(P242) Take precautionary measures against static discharge(P243) Do not breathe mist, vapours and spray.(P260) Wash thoroughly after handling.(P264) Do not eat, drink or smoke when using this product(P270) Use only outdoors or in a well-ventilated area(P271) Wear protective gloves, eye protection and face protection.(P280) Wear protective gloves.(P280)
Response	IF ON SKIN: Wash with plenty of soap and water(P302+P352) IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower(P303+P361+P353) IF INHALED: Remove person to fresh air and keep comfortable for breathing.(P304+P340) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing(P305+P351+P338) IF exposed or concerned: Get medical advice/attention(P308+P313) Call a POISON CENTER/doctor. If you feel unwell.(P312) Specific treatment.(P321) If skin irritation occurs: Get medical advice/attention(P332+P313) If eye irritation persists: Get medical advice/attention(P337+P313) Take off contaminated clothing and wash it before reuse.(P362+P364) In case of fire: Use appropriate extinguishing media.(P370+P378)
Storage	Store in a well-ventilated place. Keep container tightly closed.(P403+P233) Store in a well-ventilated place. Keep cool(P403+P235)

	Store locked up(P405)
Disposal	Dispose of contents/ container to an approved landfill.(P501)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances or mixtures: Mixtures

Chemical name	Contents	Chemical Formula	CAS RN
Ethanol	80-90%	CH3CH2OH	64-17-5
Other	10-20%	Unknown	Confidential
Acetic acid	<1%	CH3COOH	64-19-7
2-Propenoic acid, 3-(trimethoxysilyl)propyl ester	<1%	Unknown	4369-14-6

4. FIRST-AID MEASURES

In case of inhalation	Call a POISON CENTER or doctor / physician if you feel unwell. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician. IF exposed or concerned: Get medical advice and attention.
In case of skin contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice and attention. IF exposed or concerned: Get medical advice and attention. Specific treatment.
In case of eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF exposed or concerned: Get medical advice and attention.
In case of ingestion	Rinse mouth. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. IF exposed or concerned: Get medical advice and attention. Being a volatile liquid, forcing to vomit increases risks such as aspirating into the lungs. Arrange medical treatment immediately. Also, have mouth rinsed thoroughly with water. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Suitable fire-extinguishing media	Dry chemical, alcohol-resistant foam, CO2, sand, water spray.
Not suitable extinguishing media	Cylindric water.
Specific hazards arising from the chemical	Risk of producing harmful gases such as carbon monoxide and sulfur oxides. Avoid inhalation of smoke or gases

Special protective actions for fire fighters	Use goggles in combination with dust mask, and another protections as appropriate to situation.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Use goggles in combination with dust mask, and another protections as appropriate to situation. Large spills :Evacuate area. Ensure adequate ventilation.
Environmental precautions	Do not discharge into the drains, surface waters or ground water directly.
Methods and materials for containment and cleaning up	Large spills :Evacuate area. Large spills: Dike spills and dispose of in safe area. small spill : abeorb with material such as non-combustible materialwash thoroughly after handling Cautiously neutralize with dry soda ash and slaked lime if necessary. If not harmful, evaporate and disperse while being careful of fire and ventilation. You may also spray water to accelarate the evaporation.
Prevention Measures for Secondary Accidents	Keep away from sources of ignition and prepare extinguishing media. Risk of slipping. Spilled material forms slippery floor. Do not recklessly walk on the spillage.

7. HANDLING AND STORAGE

Handling	
Technical measures	Ground/bond container and receiving equipment. Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting. Take precautionary measures against static discharge. Use local exhaust ventilation in case of production of fume or mist. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Safe handling advice	Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Keep cool. Do not breathe dust/fume/gas/mist/vapours/spray.
Storage	
Suitable storage conditions	Store locked up. Store container tightly closed in well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

	ACGIH (TLV)	OSHA (PEL)	Workplace Safety And Health (General Provisions) Regulations
Ethanol	TWA -,STEL 1000 ppm	1000 ppm TWA; 1900 mg/m3 TWA	1000 ppm PEL; 1880 mg/m3 PEL
Acetic acid	TWA 10 ppm,STEL 15 ppm	10 ppm TWA; 25 mg/m3 TWA	10 ppm PEL; 25 mg/m3 PEL; 15 ppm STEL; 37 mg/m3 STEL

Engineering measures: Use local exhaust ventilation in case of production of fume or mist. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use explosion-proof electrical equipment and prevent from static electrocity.

Individual protection measures

- Respiratory protection: If necessary, wear respiratory protection.
- Hand protection: Wear protective gloves.
- Eye protection: Wear eye protection/face protection.
- Skin and body protection: Wear protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical State	Liquid
Color	clear
Odor	pungent
Odor threshold	No data available
pH	3-5
Melting point	No data available
Boiling point	77℃
Flash point	18℃ (Tag Closed Cup)
Evaporation rate	No data available
Flammability(Solid,Gas)	No data available
Flammability or explosive limits	
LOWER LIMIT	3.3 vol% (Ethanol)
UPPER LIMIT	19.0 vol% (Ethanol)
Vapor pressure	5880Pa (20℃) (Ethanol)
Vapor density	1.6 (Ethanol)
Relative density	0.789g/cm3 (20℃) (Ethanol)
Solubility(ies)	Water soluble
Partition coefficient: n-octanol/water	log Pow = -0.31 (Ethanol)
Auto-ignition temperature	439℃ or more (Ethanol)

Decomposition temperature	No data available
Viscosity	No data available

10. STABILITY AND REACTIVITY

Reactivity	No reactivity hazard is expected.
Chemical stability	Stable under normal conditions of use.
Possibility of hazardous reactions	Hazardous polymerization will not occur.
Conditions to avoid	Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Avoid contact with incompatible materials.
Incompatible materials	Acids, bases, combustible materials, halo carbons, halogens, metal oxides, metal salts, metals, oxidizing materials, peroxides.
Hazardous decomposition products	Oxides of carbon.

11. TOXICOLOGICAL INFORMATION

Acute toxicity (Oral)	Not classified:64-17-5 (source: NITE), 64-19-7 (source: NITE) Not applicable:4369-14-6 (source: NITE) No data:Confidential (source: None) Contains substance of unknown toxicity. Changed from Not classified to Classification not possible.
Acute toxicity (Dermal)	Category 4:64-19-7 (toxicity value = 1060mg/kg, source: NITE) Not classified:64-17-5 (source: NITE) Not applicable:4369-14-6 (source: NITE) No data:Confidential (source: None) Calculation result = 210512.3791871mg/kg. Contains substance of unknown toxicity. Changed from Not classified to Classification not possible.
Acute toxicity (Inhalation : Gases)	Does not fall under gas based on GHS definitions.
Acute toxicity (Inhalation : Vapours)	Not classified:64-17-5 (source: NITE) Not applicable:4369-14-6 (source: NITE) No data:64-19-7 (source: None), Confidential (source: None) Contains substance of unknown toxicity. Changed from Not classified to Classification not possible.
Acute toxicity (Inhalation : dust/mist)	Category 4:4369-14-6 (converted value = 1.5mg/l, source: 1272/2008/EC) No data:64-17-5 (source: None), 64-19-7 (source: None), Confidential (source: None) Calculation result = 16.512012mg/kg. Contains substance of unknown

	toxicity. Changed from Not classified to Classification not possible.
Skin corrosion/ Irritation	Category 1-1A:64-19-7 (source: 1272/2008/EC) Category 1-1B:4369-14-6 (source: 1272/2008/EC) Not classified:64-17-5 (source: NITE) No data:Confidential (source: None)
Serious eye damage/ irritation	Sum of (Category 1 + 1A + 1B + 1C) x 10 Concentration limit = 10%. Classification result = Category 2. Category 1:64-19-7 (source: NITE) Category 2B:64-17-5 (source: NITE) Not applicable:4369-14-6 (source: NITE) No data:Confidential (source: None)
Respiratory Sensitization	Sum of 10 x (Eye category 1 + Skin category 1) Concentration limit = 10%. Classification result = Category 2A. Not applicable:4369-14-6 (source: NITE) No data:64-17-5 (source: None), 64-19-7 (source: None), Confidential (source: None)
Skin Sensitization	Contains substance of unknown toxicity. Changed from Not classified to Classification not possible. Category 1:4369-14-6 (source: 1272/2008/EC) No data:64-17-5 (source: None), 64-19-7 (source: None), Confidential (source: None)
Germ cell mutagenicity	Substances classified as hazardous are below the concentration limit. Contains substance of unknown toxicity. Changed from Not classified to Classification not possible. Ingredients not contributing to classification: 4369-14-6 (category = Category 1, source: 1272/2008/EC) Not applicable:4369-14-6 (source: NITE) No data:64-17-5 (source: None), 64-19-7 (source: None), Confidential (source: None)
Carcinogenicity	Substances classified as hazardous are below the concentration limit. Contains substance of unknown toxicity. Changed from Not classified to Classification not possible. Category 1A:64-17-5 (source: NITE) Not applicable:4369-14-6 (source: NITE) No data:64-19-7 (source: None), Confidential (source: None)

Reproductive toxicity	64-17-5 >= 0.1% Classification result = Category 1A Category 1A:64-17-5 (source: NITE) Not applicable:4369-14-6 (source: NITE) No data:64-19-7 (source: None), Confidential (source: None)
Reproductive toxicity, effects on or via lactation	64-17-5 >= 0.3% Classification result = Category 1A Unable to classify due to insufficient data.
Specific target organ Toxicity - Single Exposure	Category 1:64-19-7 (organ = blood,respiratory system, source: NITE) Category 3:64-17-5 (organ = narcotic effect,respiratory tract irritation, source: NITE) Not applicable:4369-14-6 (source: NITE) No data:Confidential (source: None) Sum of Category 3(narcotic effect) Concentration limit = 20%. Classification result = Category 3(narcotic effect). Sum of Category 3(respiratory tract irritation) Concentration limit = 20%. Classification result = Category 3(respiratory tract irritation).
Specific target organ toxicity - Repeated Exposure	Category 1:64-17-5 (organ = liver, source: NITE) Category 2:64-17-5 (organ = central nervous system, source: NITE) Not applicable:4369-14-6 (source: NITE) No data:64-19-7 (source: None), Confidential (source: None) 64-17-5 >= 10% Classification result = Category 1(liver) 64-17-5 >= 10% Classification result = Category 2(central nervous system)
Aspiration hazard	Unable to classify due to insufficient data.

12. ECOLOGICAL INFORMATION

Hazardous to the Aquatic Environment - Acute Toxicty	Category 3:64-19-7 (source: NITE) Not classified:64-17-5 (source: NITE) Not applicable:4369-14-6 (source: NITE) No data:Confidential (source: None) Contains substance of unknown toxicity. Changed from Not classified to Classification not possible.
Hazardous to the Aquatic Environment - Chronic Toxicity	Category 3:4369-14-6 (source: 1272/2008/EC) Not classified:64-17-5 (source: NITE), 64-19-7 (source: NITE) No data:Confidential (source: None) (M factor x 100 x Category 1) + (10 x Category 2) + Category 3 >= Concentration limit(25%). Classification result = Not classified.

Hazardous to the Ozone layer	Unable to classify due to insufficient data.

13. DISPOSAL CONSIDERATIONS

Residual Waste	Before disposal, make the wastes harmless, stabilized, and neutralized, and minimize danger and toxicity of the wastes. Passed to a licensed waste contractor.
Contaminated Container and Packaging	Passed to a licensed waste contractor. In case of disposal of empty containers, remove the content thoroughly.

14. TRANSPORT INFORMATION

International regulations

Sea(IMDG)

UN number	1170
UN proper shipping name	ETHANOL SOLUTION
Transport hazard class(es)	3
Packing group	Ⅱ

air(IATA)

UN number	1170
UN proper shipping name	ETHANOL SOLUTION
Transport hazard class(es)	3
Packing group	Ⅱ

15. REGULATORY INFORMATION

Chemical Weapons (Prohibition) Act	Environmental Protection Management Law
Fire Safety Act	Exemption Threshold Quantities for Flammable Materials Storage Licensing Petroleum and Flammable Materials
Workplace Safety And Health	Occupational Exposure Limits

Component Analysis – Inventory

Ethanol (64-17-5)

TSCA – United States	ENCS – Japan	KECI Annex 1, 2 – Korea	IECSC – China	DSL/NDSL – Canada	PICCS – Philippines	AICS – Australia	EINECS/ELINCS – European Union	TCSI – Taiwan	NZIoC – New Zealand
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Acetic acid (64-19-7)

TSCA – United States	ENCS – Japan	KECI Annex 1, 2 – Korea	IECSC – China	DSL/NDSL – Canada	PICCS – Philippines	AICS – Australia	EINECS/ELINCS – European Union	TCSI – Taiwan	NZIoC – New Zealand
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

2-Propenoic acid, 3-(trimethoxysilyl)propyl ester (4369-14-6)

TSCA – United States	ENCS – Japan	KECI Annex 1, 2 – Korea	IECSC – China	DSL/NDSL – Canada	PICCS – Philippines	AICS – Australia	EINECS/ELINCS – European Union	TCSI – Taiwan	NZIoC – New Zealand

Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No

16. OTHER INFORMATION

Literature References	NITE GHS EU CLP Regulation, AnnexVI
Other data	The information suggested in this Safety Data Sheet does not comprehend everything and should be adopted only as a guide. The accuracy of the information and recommendations suggested herein are credible. However the company makes no warranty regarding such information and recommendations and disclaims all liability for reliance thereon.