SAFETY DATA SHEET

In accordance with OSHA HCS 1910.1200

Section 1: Identification

Product identifier used on the label;

Product Name: Multi Purpose Ink Black

Other means of identification;

VJ-MP11-BK950/ VJ-MP11-BK500

Recommended use of the chemical and restrictions on use;

Digital printing

Name, address, and telephone number of the supplier;

Name: MUTOH America Inc
Address: 4405 East Baseline Road, Suites 120 Phoenix, Arizona 85042
Contact section: Custmer Care
Telephone number: 480-968-7772

Emergency phone number. 480-968-7772 (During normal opening times)

Section 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of § 1910.1200;

Physical Hazards

FLAMMABLE LIQUIDS Category 4

Health Hazards

ACUTE TOXICITY (DERMAL) Category 4*

* Max. 65 % of the mixture consists of ingredients of unknown acute toxicity.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE

Category 1 (The central nervous system, blood, systemic toxicity)

Category 2 (kidney)

SPECIFIC TARGET ORGAN TOXICITY REPEATED OR PROLONGED EXPOSURE

Category 2 (blood, kidney)

Environmental Hazards

AQUATIC ACUTE TOXICITY Category 3

Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200;

Symbols:

Signal word **Danger**

Hazard Statements
Combustible liquid
Harmful in contact with skin
Causes damage to organs
(The central nervous system, blood, systemic toxicity)
May cause damage to organs (kidney)
May cause damage to organs through prolonged or repeated exposure (blood, kidney)
Harmful to aquatic life

Precautionary Statements

[Prevention]
Keep away from flames and hot surfaces. - No smoking.
Do not breathe gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

[Response]
IF ON SKIN: Wash with plenty of water and soap.
IF ON SKIN: Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Call a POISON CENTER/doctor.
IF exposed or concerned: Get medical advice/attention if you feel unwell.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry chemicals, carbon dioxide, and alcohol-resistance foam to extinguish.

[Storage]
Store in a well-ventilated place. Keep cool.
Store locked up.

[Disposal]
Dispose of contents/ container in accordance with related laws and local/ regional regulations.

Description of any hazards not otherwise classified;

Contact with eyes may result in irritation.
Contact with skin may result in irritation.
Ingestion may result in gastric disturbance.
Prolonged or repeated inhalation of vapor may cause headaches, dizziness or nausea.

Section 3: Composition/information on ingredients

Compositions (contents of the product)

Chemical name	Wt. %	CAS No.
Ethyl lactate	45 - 55	687-47-8
Ethylene glycol monobutyl ether acetate	35 - 45	112-07-2

Carbon black	1 - 10	1333-86-4
Polymer	1 - 10	-

Section 4: First-aid measures

Necessary first-aid measures by relevant routes of exposure;

IF INHALED: Move to fresh air area. Call a physician.

IF ON SKIN: In case of contact, immediately wash skin with soap and plenty of water. If irritation develops, get medical attention. Remove contaminated clothing and shoes.

IF IN EYES: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If irritation develops, get medical attention.

IF INGESTED: If swallowed, seek medical advice immediately.

Most important symptoms/effects, acute and delayed;

Harmful in contact with skin.

Suspected of causing cancer.

Causes damage to organs by single exposure and through prolonged or repeated exposure.

Indication of immediate medical attention and special treatment needed, if necessary;

No information

Section 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media;

Suitable extinguishing media:

Small fire: Dry chemicals, carbon dioxide, water, sprinkling, and alcohol-resistance foam extinguishing agent.

Large fire: Dry chemicals, carbon dioxide, and alcohol-resistance foam extinguishing agent.

Unsuitable extinguishing media:

Jet water.

Specific hazards arising from the chemical;

Irritant, corrosive and/or toxic gas may be generated by a fire.

Container may explode when heated.

Special protective equipment and precautions for fire-fighters;

Carry out fire-fighting at the safe and effective distance from the fire, or use a unattended hose-holding unit, or a nozzle with a monitor.

In fire-extinguishing activity, wear an appropriate air breathing apparatus and full protective clothing for chemicals.

The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

Section 6: Accidental release measures

Personal precautions, protective equipment, and emergency procedures;

Personal precautions:

Do not touch the leakage, and do not walk on it.

Protective equipment:

Wear appropriate personal protective equipment (Refer to "Section 8: Exposure controls/personal protection") and avoid inhalation or contact with eyes and skin.

Emergency procedures:

Prohibit unauthorized entry into the area.

If not wearing appropriate personal protective clothing, do not touch the damaged container and leakage.

Environmental precautions:

Do not release into the environment. Pay attention not to cause the influence on the environment by discharging into rivers.

Methods and materials for containment and cleaning up;

In case of small quantity, absorb the leakage with dry soil, sand, and incombustible-material or collect it into a container that can be covered tightly for later disposal. Use clean and anti-static tools to collect absorbed materials. Prevent the material from wetting by rain.

In case of large quantity, prevent the spills from spreading with embankment to lead them to a safe place for collection. Collect the material into a disposal container by sucking up or sweeping up.

All devices to handle spills must be grounded. If not dangerous, stop the leak.

Cover the materials with dry soil, dry sand, or non-combustibles and store under a plastic sheet cover to avoid scattering and wetting.

Clean the contaminated area thoroughly with water after removal.

Prevention measures for secondary accidents;

Remove all ignition sources promptly. (Prohibition of smoking, sparks, and flames in the surrounding area.) Prevent flowing into drain, sewage, basement, and closed area.

Section 7: Handling and storage

Precautions for safe handling;

Technical measures: Provide ventilation system and Use necessary personal protective equipment as described in "Section 8: Exposure controls/personal protection".

Precautions such as local/total ventilation:

Provide local ventilations and a full ventilation system as described in "Section 8: Exposure controls/personal protection".

Precautions for safe handling:

Prohibit the use of heat, sparks, and fire in the surrounding area.

Wash hands thoroughly after handling.

Avoid swallowing.

Avoid the contact with the skin.

Prevention of contact: Refer to "Section 10: Stability and reactivity".

Conditions for safe storage, including any incompatibilities;

Technical measures: The storage facility should be designed with fire-proof construction and beams should use a non-combustible material. The roof of a storage facility should be made of a non-combustible material and use metals or other lightweight non-combustible materials. No ceiling should be installed. The

storage floor should be protected from water penetration, or should have water-proof construction. The storage floor should have penetration-proof construction against dangerous goods and be inclined adequately. A proper sump should be provided to catch any spills. The storage facility should be provided with necessary lighting, lighting equipment, and ventilator to store and handle dangerous goods.

Incompatible materials and mixtures:

Refer to "Section 10: Stability and reactivity".

Conditions for safe storage:

Store away from oxidants. Have containers keep away from direct sunlight and heat. Store in a well-ventilated and cool place keeping container tightly closed. Store locked up.

Packing material: Use containers prescribed in the "UN Transport Regulations".

Section 8: Exposure controls/personal protection

Occupational Exposure Limits;

OSHA PEL:	3.5 mg/m^3 (Carbon black) (Inhalable fraction)
ACGIH TLV-TWA:	3 mg/m^3 (Carbon black) (Inhalable fraction of the aerosol)
	20 ppm, 130 mg/m^3 (Ethylene glycol monobutyl ether acetate)

Appropriate engineering controls;

Use Local exhaust ventilation.

Individual protection measures, such as personal protective equipment;

Respiratory protection:	Respirator to avoid breathing organic solvent vapor.
Hand protection:	Wear chemical resistant gloves.
Eye/ face protection:	Use safety glasses or goggles.
Skin and body protection:	Wear working clothes.
Specific hygiene measures:	Wash hands thoroughly after handling.

General industrial hygiene practice;

Wash hands thoroughly after handling.

Section 9: Physical and chemical properties

Appearance (physical state, color, etc.);	Black liquid
Odor;	Mild odor
Odor threshold;	No information
pH;	No information
Melting point/freezing point;	No information
Initial boiling point and boiling range;	No information
Flash point;	63°C (Tag closed cup)
Evaporation rate;	No information
Flammability (solid, gas);	Not applicable
Upper/lower flammability or explosive limits;	No information
Vapor pressure;	No information
Vapor density;	No information
Relative density;	0.99-1.02 g/cm^3 (25°C)

Solubility(ies);	Insoluble in water
Partition coefficient: *n*-octanol/water;	No information
Auto-ignition temperature;	> 340°C (Ethylene glycol monobutyl ether acetate)
Decomposition temperature;	No information
Viscosity;	No information

Section 10: Stability and reactivity

Reactivity; Stable under normal handling condition.

Chemical stability; No hazardous reaction expected under normal handling.
No decomposition if stored and applied as directed.

Possibility of hazardous reactions;
Contact with acids and oxidizing agents may cause hazardous reactions.

Conditions to avoid; Extremely high temperature.
Contact with incompatible materials.

Incompatible materials; Acids and oxidizing agents

Hazardous decomposition products;
Irritant, corrosive and/or toxic gas may be generated by a fire.

Section 11: Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

ACUTE TOXICITY: (Oral) rat LD_{50} = 3,000 mg/kg (male)
(Oral) rat LD_{50} = 2,400 mg/kg (female)
(Oral) rat LD_{50} = 1,600 mg/kg
(Oral) rat LD_{50} = 7,000 mg/kg
(Oral) rat LD_{50} = 2,360 mg/kg
(Dermal) rabbit LD_{50} = 1,500 mg/kg
(Inhal) rat LC_{50} > 400 ppm (4h)

CARTINOGENICITY: Considered to be corresponding to IARC Group 3 (unclassifiable as to carcinogenicity in humans) based on the toxicity data on ethylene glycol monobutyl ether, metabolite *in vivo*.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE:
In acute toxicity studies in rats, influences on red blood cells and kidneys (hemoglobinuria, hematuria, decrease in red blood cells and haemoglobin, tubulonecrosis, etc.) were observed. In humans, central nervous depression, metabolic acidosis, decrease of red blood cells and haemoglobin were observed.

SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE:
In a 30-day inhalation study in rats, death, hemoglobinuria, hematuria, decrease of red blood cells and haemoglobin, renal hypertrophy and nephrosis were observed at the range of the guidance value Category 2. In 4-week inhalation study in rats, rabbits and cats, influences related to anemia (decrease in haemoglobin, hematocrit and red blood cells, etc.) were reported at the range of the guidance value Category 2. In 14-week inhalation study in rats and mice with ethylene glycol monobutyl ether (hydrolyzed product of

ethylene glycol monobutyl ether acetate in the body), hemolytic anemia and related effects on liver, kidneys, bone marrow, spleen were observed at higher doses correspond to the guidance value Category 2 in both animals.

Information on ingredient (Carbon black):

ACUTE TOXICITY: (Oral) rat LD_{50} = 15,400mg/kg mg/kg
(Oral) rat LD_0 > 8,000 mg/kg
(Dermal) rabbit LD_{50} > 3 gm/kg

CARTINOGENICITY:

Classification of IARC is 2B, and classification of the Japan Society for Occupational Health is 2B. On the other hand, in the evaluation of EU CLP and ICBA (International Carbon Black Association), carbon black is no need to classify the carcinogenicity by the epidemiological findings and "Lung tumors was observed in animal toxicity studies, it is a phenomenon of rat-specific that occurs when the water-insoluble fine particles were overload to the lungs". It is considered that carbon black is present only in a bound form in this product, exposure does not occur as long as binding state is maintained.

SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE:

Workers exposed to carbon black for long periods (over 10 years) showed lung diseases (e.g. cough, phlegm, chronic bronchitis, pulmonary function impairment, pneumoconiosis, pneumonectasia, impeded blood flow to the lungs, obstructive pulmonary disease, bronchial hyperreactivity, airway resistance or decrease of expiratory flow rate). Additionally it is reported that fine diffuse changes were shown in chest radiographs, and reticular fiber formation relevant to deposition of fine grain of carbon black and emphysema was observed in histologic examination. It is considered that carbon black is present only in a bound form in this product, exposure does not occur as long as binding state is maintained.

Delayed and immediate effects and also chronic effects from short- and long-term exposure;

Harmful in contact with skin.
Suspected of causing cancer.
Causes damage to organs by single exposure and through prolonged or repeated exposure.

Numerical measures of toxicity (such as acute toxicity estimates);

Acute toxicity (dermal) was estimated based on ingredients of the product by additivity formula.

Whether the chemical is listed in the NTP Report on Carcinogens or has been found to be a potential carcinogen in the IARC Monographs, or by OSHA;

IARC: Group 2B (Carbon black)
NTP Report: Not listed
OSHA: Not listed

Section 12: Ecological information

Ecotoxicity;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Crustacean (*Daphnia magna*): 48-h EC_{50} = 67.5 mg/L

Information on ingredient (Carbon black):

Fish (*Tribolodon hakonensis*): 96-h LC_{50} > 1,000 mg/L

Crustacean (*Daphnia magna*): 24-h LC_{50} > 5,600 mg/L

Algae (*Scenedesmus subspicatus*): 72-h ErC_{50} > 10,000 mg/L

Persistence and degradability;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Ready biodegradable (Degradability after 6.5 days by DOC > 90 %)

Bioaccumulative potential;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Bioaccumulative potential is expected to be low (Fish BCF (est.) = 3.8)

Mobility in soil;

No information

Other adverse effects;

The product should not be allowed to enter drains, water courses or the soil.

Section 13: Disposal considerations

Residual waste: For disposal, conform with the standards provided by related laws and local public bodies. When commissioning the disposal to a disposal company, notify the danger and toxicity thoroughly to the company.

Contaminated container and packaging:

Recycle containers after cleansing, or carry out the disposal under the related laws and regulations and the standards of the local governments. In case of disposal of empty containers, remove the content thoroughly.

Section 14: Transport information

UN number; Not applicable

UN proper shipping name; Not applicable

Transport hazard class(es); Not applicable

Packing group, if applicable; Not applicable

Environmental hazards (e.g., Marine pollutant (Yes/No));

No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code);

Not applicable

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;

When transporting, avoid direct sunlight. Confirm no leakage to containers. Load to prevent falling dropping off or damage containers and take preventive measures of collapse.

Section 15: Regulatory information

OSHA: Hazardous chemical

TSCA inventory: All ingredients in this product are listed on the TSCA Inventory.

SARA Title Ⅲ: This product contains Section 313 (TRI Chemicals):
Glycol ether (considered as a part of ethylene glycol monobutyl ether acetate)

California Prop.65:  **WARNING:** This product can expose you to chemicals including Carbon black, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Section 16: Other information, including date of preparation or last revision

HMIS (Hazardous Material Identification System) Rating:

Health: 1*, Flammability: 2, Physical hazard: 0, Personal protection: H
(0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe, *= chronic hazard)

NFPA (National Fire Protection Association) Rating:

Health: 1, Flammability: 2, Instability: 0
(0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard)

Update history:

Date of issue: July01, 2020

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Literature references: Information of MUTOH INDUSTRIES LTD.
NITE GHS classification results (http://www.safe.nite.go.jp/ghs/list.html).
ACGIH, American Conference of Governmental Industrial Hygienists (2012) TLVs and BEIs.

[Disclaimer]

This “Safety Data Sheet” contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of preparation, but should only be used as a guide. It is subject to revision from time to time. MUTOH does not warrant the completeness or accuracy of the information contained herein.

SAFETY DATA SHEET

In accordance with OSHA HCS 1910.1200

Section 1: Identification

Product identifier used on the label;

Product Name: Multi Purpose Ink Cleaner

Other means of identification;

VJ-MP11-CL950/ VJ-MP11-CL500/ VJ-MP11-CL1000B

Recommended use of the chemical and restrictions on use;

Digital printing

Name, address, and telephone number of the supplier;

Name: MUTOH America Inc
Address: 4405 East Baseline Road, Suites 120 Phoenix, Arizona 85042
Contact section: Custmer Care
Telephone number: 480-968-7772

Emergency phone number. 480-968-7772 (During normal opening times)

Section 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of § 1910.1200;

Physical Hazards

FLAMMABLE LIQUIDS Category 4

Health Hazards

ACUTE TOXICITY (DERMAL) Category 4*

* Max. 55 % of the mixture consists of ingredient of unknown acute toxicity.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE
Category 1 (The central nervous system, blood, systemic toxicity),
Category 2 (kidney),

SPECIFIC TARGET ORGAN TOXICITY REPEATED OR PROLONGED EXPOSURE
Category 2 (blood, kidney)

Environmental Hazards

AQUATIC ACUTE TOXICITY Category 3

Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200;

Symbols:

Signal word **Danger**

Hazard Statements
Combustible liquid
Harmful in contact with skin
Causes damage to organs
(The central nervous system, blood, systemic toxicity)
May cause damage to organs (kidney)
May cause damage to organs through prolonged or repeated exposure
(blood, kidney)
Harmful to aquatic life

Precautionary Statements

[Prevention]
Keep away from flames and hot surfaces. - No smoking.
Do not breathe gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

[Response]
IF ON SKIN: Wash with plenty of water and soap.
IF ON SKIN: Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Call a POISON CENTER/doctor.
IF exposed or concerned: Get medical advice/attention if you feel unwell.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry chemicals, carbon dioxide, and alcohol-resistance foam to extinguish.

[Storage]
Store in a well-ventilated place. Keep cool.
Store locked up.

[Disposal]
Dispose of contents/ container in accordance with related laws and local/ regional regulations.

Description of any hazards not otherwise classified;

Contact with eyes may result in irritation.
Contact with skin may result in irritation.
Ingestion may result in gastric disturbance.
Prolonged or repeated inhalation of vapor may cause headaches, dizziness or nausea.

Section 3: Composition/information on ingredients

Compositions (contents of the product)

Chemical name	Wt. %	CAS No.
Ethyl lactate	45 - 55	687-47-8
Ethylene glycol monobutyl ether acetate	45 - 55	112-07-2

Section 4: First-aid measures

Necessary first-aid measures by relevant routes of exposure;

IF INHALED: Move to fresh air area. Call a physician.

IF ON SKIN: In case of contact, immediately wash skin with soap and plenty of water. If irritation develops, get medical attention. Remove contaminated clothing and shoes.

IF IN EYES: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If irritation develops, get medical attention.

IF INGESTED: If swallowed, seek medical advice immediately.

Most important symptoms/effects, acute and delayed;

Harmful in contact with skin.

Causes damage to organs by single exposure and through prolonged or repeated exposure.

Indication of immediate medical attention and special treatment needed, if necessary;

No information

Section 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media;

Suitable extinguishing media:

Small fire: Dry chemicals, carbon dioxide, water, sprinkling, and alcohol-resistance foam extinguishing agent.

Large fire: Dry chemicals, carbon dioxide, and alcohol-resistance foam extinguishing agent.

Unsuitable extinguishing media:

Jet water.

Specific hazards arising from the chemical;

Irritant, corrosive and/or toxic gas may be generated by a fire.

Container may explode when heated.

Special protective equipment and precautions for fire-fighters;

Carry out fire-fighting at the safe and effective distance from the fire, or use a unattended hose-holding unit, or a nozzle with a monitor.

In fire-extinguishing activity, wear an appropriate air breathing apparatus and full protective clothing for chemicals.

The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

Section 6: Accidental release measures

Personal precautions, protective equipment, and emergency procedures;

Personal precautions:

Do not touch the leakage, and do not walk on it.

Protective equipment:

Wear appropriate personal protective equipment (Refer to "Section 8: Exposure controls/personal protection") and avoid inhalation or contact with eyes and skin.

Emergency procedures:

Prohibit unauthorized entry into the area.

If not wearing appropriate personal protective clothing, do not touch the damaged container and leakage.

Environmental precautions:

Do not release into the environment. Pay attention not to cause the influence on the environment by discharging into rivers.

Methods and materials for containment and cleaning up;

In case of small quantity, absorb the leakage with dry soil, sand, and incombustible-material or collect it into a container that can be covered tightly for later disposal. Use clean and anti-static tools to collect absorbed materials. Prevent the material from wetting by rain.

In case of large quantity, prevent the spills from spreading with embankment to lead them to a safe place for collection. Collect the material into a disposal container by sucking up or sweeping up.

All devices to handle spills must be grounded. If not dangerous, stop the leak.

Cover the materials with dry soil, dry sand, or non-combustibles and store under a plastic sheet cover to avoid scattering and wetting.

Clean the contaminated area thoroughly with water after removal.

Prevention measures for secondary accidents;

Remove all ignition sources promptly. (Prohibition of smoking, sparks, and flames in the surrounding area.) Prevent flowing into drain, sewage, basement, and closed area.

Section 7: Handling and storage

Precautions for safe handling;

Technical measures: Provide ventilation system and Use necessary personal protective equipment as described in "Section 8: Exposure controls/personal protection".

Precautions such as local/total ventilation:

Provide local ventilations and a full ventilation system as described in "Section 8: Exposure controls/personal protection".

Precautions for safe handling:

Prohibit the use of heat, sparks, and fire in the surrounding area.

Wash hands thoroughly after handling.

Avoid swallowing.

Avoid the contact with the skin.

Prevention of contact: Refer to "Section 10: Stability and reactivity".

Conditions for safe storage, including any incompatibilities;

Technical measures: The storage facility should be designed with fire-proof construction and beams should use a non-combustible material. The roof of a storage facility should be made of a non-combustible material and use metals or other lightweight non-combustible materials. No ceiling should be installed. The storage floor should be protected from water penetration, or should have water-proof construction. The storage floor should have penetration-proof construction against dangerous goods and be inclined adequately. A proper

sump should be provided to catch any spills. The storage facility should be provided with necessary lighting, lighting equipment, and ventilator to store and handle dangerous goods.

Incompatible materials and mixtures:

Refer to "Section 10: Stability and reactivity".

Conditions for safe storage:

Store away from oxidants. Have containers keep away from direct sunlight and heat. Store in a well-ventilated and cool place keeping container tightly closed. Store locked up.

Packing material: Use containers prescribed in the "UN Transport Regulations".

Section 8: Exposure controls/personal protection

Occupational Exposure Limits;

ACGIH TLV-TWA: 20 ppm, 130 mg/m^3 (Ethylene glycol monobutyl ether acetate)

Appropriate engineering controls;

Use Local exhaust ventilation.

Individual protection measures, such as personal protective equipment;

Respiratory protection:	Respirator to avoid breathing organic solvent vapor.
Hand protection:	Wear chemical resistant gloves.
Eye/ face protection:	Use safety glasses or goggles.
Skin and body protection:	Wear working clothes.
Specific hygiene measures:	Wash hands thoroughly after handling.

General industrial hygiene practice;

Wash hands thoroughly after handling.

Section 9: Physical and chemical properties

Appearance (physical state, color, etc.);	Colorless transparence liquid
Odor;	Mild odor
Odor threshold;	No information
pH;	No information
Melting point/freezing point;	No information
Initial boiling point and boiling range;	No information
Flash point;	63°C (Tag closed cup)
Evaporation rate;	No information
Flammability (solid, gas);	Not applicable
Upper/lower flammability or explosive limits;	No information
Vapor pressure;	No information
Vapor density;	No information
Relative density;	0.97-1.00 g/cm^3 (25°C)
Solubility(ies);	Insoluble in water
Partition coefficient: *n*-octanol/water;	No information
Auto-ignition temperature;	> 340°C (Ethylene glycol monobutyl ether acetate)
Decomposition temperature;	No information
Viscosity;	No information

Section 10: Stability and reactivity

Reactivity; Stable under normal handling condition.

Chemical stability; No hazardous reaction expected under normal handling.
No decomposition if stored and applied as directed.

Possibility of hazardous reactions;
Contact with acids and oxidizing agents may cause hazardous reactions.

Conditions to avoid; Extremely high temperature.
Contact with incompatible materials.

Incompatible materials; Acids and oxidizing agents

Hazardous decomposition products;
Irritant, corrosive and/or toxic gas may be generated by a fire.

Section 11: Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

ACUTE TOXICITY: (Oral) rat LD_{50} = 3,000 mg/kg (male)
(Oral) rat LD_{50} = 2,400 mg/kg (female)
(Oral) rat LD_{50} = 1,600 mg/kg
(Oral) rat LD_{50} = 7,000 mg/kg
(Oral) rat LD_{50} = 2,360 mg/kg
(Dermal) rabbit LD_{50} = 1,500 mg/kg
(Inhal) rat LC_{50} > 400 ppm (4h)

CARTINOGENICITY: Considered to be corresponding to IARC Group 3 (unclassifiable as to carcinogenicity in humans) based on the toxicity data on ethylene glycol monobutyl ether, metabolite *in vivo*.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE:
In acute toxicity studies in rats, influences on red blood cells and kidneys (hemoglobinuria, hematuria, decrease in red blood cells and haemoglobin, tubulonecrosis, etc.) were observed. In humans, central nervous depression, metabolic acidosis, decrease of red blood cells and haemoglobin were observed.

SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE:
In a 30-day inhalation study in rats, death, hemoglobinuria, hematuria, decrease of red blood cells and haemoglobin, renal hypertrophy and nephrosis were observed at the range of the guidance value Category 2. In 4-week inhalation study in rats, rabbits and cats, influences related to anemia (decrease in haemoglobin, hematocrit and red blood cells, etc.) were reported at the range of the guidance value Category 2. In 14-week inhalation study in rats and mice with ethylene glycol monobutyl ether (hydrolyzed product of ethylene glycol monobutyl ether acetate in the body), hemolytic anemia and related effects on liver, kidneys, bone marrow, spleen were observed at higher doses correspond to the guidance value Category 2 in both animals.

Delayed and immediate effects and also chronic effects from short- and long-term exposure;

Harmful in contact with skin.
Causes damage to organs by single exposure and through prolonged or repeated exposure.

Numerical measures of toxicity (such as acute toxicity estimates);

Acute toxicity (dermal) was estimated based on ingredients of the product by additivity formula.

Whether the chemical is listed in the NTP Report on Carcinogens or has been found to be a potential carcinogen in the IARC Monographs, or by OSHA;

IARC: Not listed
NTP Report: Not listed
OSHA: Not listed

Section 12: Ecological information

Ecotoxicity;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):
Crustacean (*Daphnia magna*): 48-h EC_{50} = 67.5 mg/L

Persistence and degradability;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):
Ready biodegradable (Degradability after 6.5 days by DOC > 90 %)

Bioaccumulative potential;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):
Bioaccumulative potential is expected to be low (Fish BCF (est.) = 3.8)

Mobility in soil;

No information

Other adverse effects;

The product should not be allowed to enter drains, water courses or the soil.

Section 13: Disposal considerations

Residual waste: For disposal, conform with the standards provided by related laws and local public bodies. When commissioning the disposal to a disposal company, notify the danger and toxicity thoroughly to the company.

Contaminated container and packaging:
Recycle containers after cleansing, or carry out the disposal under the related laws and regulations and the standards of the local governments. In case of disposal of empty containers, remove the content thoroughly.

Section 14: Transport information

UN number; Not applicable

UN proper shipping name; Not applicable

Transport hazard class(es); Not applicable

Packing group, if applicable; Not applicable

Environmental hazards (e.g., Marine pollutant (Yes/No));

No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code);

Not applicable

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;

When transporting, avoid direct sunlight. Confirm no leakage to containers. Load to prevent falling dropping off or damage containers and take preventive measures of collapse.

Section 15: Regulatory information

OSHA: Hazardous chemical

TSCA inventory: All ingredients in this product are listed on the TSCA Inventory.

SARA Title Ⅲ: This product contains Section 313 (TRI Chemicals):
Glycol ether (considered as a part of ethylene glycol monobutyl ether acetate)

California Prop.65: None of the chemicals in this product are listed on the state of California to cause cancer, birth defects or other reproductive harm.

Section 16: Other information, including date of preparation or last revision

HMIS (Hazardous Material Identification System) Rating:

Health: 1*, Flammability: 2, Physical hazard: 0, Personal protection: H

(0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe, *= chronic hazard)

NFPA (National Fire Protection Association) Rating:

Health: 1, Flammability: 2, Instability: 0

(0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard)

Update history:

Date of issue: July01, 2020

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Literature references: Information of MUTOH INDUSTRIES LTD.
NITE GHS classification results (http://www.safe.nite.go.jp/ghs/list.html).
ACGIH, American Conference of Governmental Industrial Hygienists (2012) TLVs and BEIs.

[Disclaimer]

This “Safety Data Sheet” contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of preparation, but should only be used as a guide. It is subject to revision from time to time. MUTOH does not warrant the completeness

or accuracy of the information contained herein.

SAFETY DATA SHEET

In accordance with OSHA HCS 1910.1200

Section 1: Identification

Product identifier used on the label;

Product Name: Multi Purpose INK Cyan

Other means of identification;

VJ-MP11-CY950/ VJ-MP11-CY500

Recommended use of the chemical and restrictions on use;

Digital printing

Name, address, and telephone number of the supplier;

Name: MUTOH America Inc
Address: 4405 East Baseline Road, Suites 120 Phoenix, Arizona 85042
Contact section: Custmer Care
Telephone number: 480-968-7772

Emergency phone number. 480-968-7772 (During normal opening times)

Section 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of § 1910.1200;

Physical Hazards

FLAMMABLE LIQUIDS Category 4

Health Hazards

ACUTE TOXICITY (DERMAL) Category 4*

* Max. 65 % of the mixture consists of ingredients of unknown acute toxicity.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE
Category 1 (The central nervous system, blood, systemic toxicity),
Category 2 (kidney),

SPECIFIC TARGET ORGAN TOXICITY REPEATED OR PROLONGED EXPOSURE
Category 2 (blood, kidney)

Environmental Hazards

AQUATIC ACUTE TOXICITY Category 3

Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200;

Symbols:

Signal word **Danger**

Hazard Statements
Combustible liquid
Harmful in contact with skin
Causes damage to organs
(The central nervous system, blood, systemic toxicity)
May cause damage to organs (kidney)
May cause damage to organs through prolonged or repeated exposure
(blood, kidney)
Harmful to aquatic life

Precautionary Statements

[Prevention]
Keep away from flames and hot surfaces. - No smoking.
Do not breathe gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

[Response]
IF ON SKIN: Wash with plenty of water and soap.
IF ON SKIN: Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Call a POISON CENTER/doctor.
IF exposed or concerned: Get medical advice/attention if you feel unwell.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry chemicals, carbon dioxide, and alcohol-resistance foam to extinguish.

[Storage]
Store in a well-ventilated place. Keep cool.
Store locked up.

[Disposal]
Dispose of contents/ container in accordance with related laws and local/ regional regulations.

Description of any hazards not otherwise classified;

Contact with eyes may result in irritation.
Contact with skin may result in irritation.
Ingestion may result in gastric disturbance.
Prolonged or repeated inhalation of vapor may cause headaches, dizziness or nausea.

Section 3: Composition/information on ingredients

Compositions (contents of the product)

Chemical name	Wt. %	CAS No.
Ethyl lactate	45 - 55	687-47-8
Ethylene glycol monobutyl ether acetate	35 - 45	112-07-2

Pigment	1 - 10	147-14-8
Polymer	1 - 10	-

Section 4: First-aid measures

Necessary first-aid measures by relevant routes of exposure;

IF INHALED: Move to fresh air area. Call a physician.

IF ON SKIN: In case of contact, immediately wash skin with soap and plenty of water. If irritation develops, get medical attention. Remove contaminated clothing and shoes.

IF IN EYES: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If irritation develops, get medical attention.

IF INGESTED: If swallowed, seek medical advice immediately.

Most important symptoms/effects, acute and delayed;

Harmful in contact with skin.

Causes damage to organs by single exposure and through prolonged or repeated exposure.

Indication of immediate medical attention and special treatment needed, if necessary;

No information

Section 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media;

Suitable extinguishing media:

Small fire: Dry chemicals, carbon dioxide, water, sprinkling, and alcohol-resistance foam extinguishing agent.

Large fire: Dry chemicals, carbon dioxide, and alcohol-resistance foam extinguishing agent.

Unsuitable extinguishing media:

Jet water.

Specific hazards arising from the chemical;

Irritant, corrosive and/or toxic gas may be generated by a fire.

Container may explode when heated.

Special protective equipment and precautions for fire-fighters;

Carry out fire-fighting at the safe and effective distance from the fire, or use a unattended hose-holding unit, or a nozzle with a monitor.

In fire-extinguishing activity, wear an appropriate air breathing apparatus and full protective clothing for chemicals.

The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

Section 6: Accidental release measures

Personal precautions, protective equipment, and emergency procedures;

Personal precautions:

Do not touch the leakage, and do not walk on it.

Protective equipment:

Wear appropriate personal protective equipment (Refer to "Section 8: Exposure controls/personal

protection") and avoid inhalation or contact with eyes and skin.

Emergency procedures:

Prohibit unauthorized entry into the area.

If not wearing appropriate personal protective clothing, do not touch the damaged container and leakage.

Environmental precautions:

Do not release into the environment. Pay attention not to cause the influence on the environment by discharging into rivers.

Methods and materials for containment and cleaning up;

In case of small quantity, absorb the leakage with dry soil, sand, and incombustible-material or collect it into a container that can be covered tightly for later disposal. Use clean and anti-static tools to collect absorbed materials. Prevent the material from wetting by rain.

In case of large quantity, prevent the spills from spreading with embankment to lead them to a safe place for collection. Collect the material into a disposal container by sucking up or sweeping up.

All devices to handle spills must be grounded. If not dangerous, stop the leak.

Cover the materials with dry soil, dry sand, or non-combustibles and store under a plastic sheet cover to avoid scattering and wetting.

Clean the contaminated area thoroughly with water after removal.

Prevention measures for secondary accidents;

Remove all ignition sources promptly. (Prohibition of smoking, sparks, and flames in the surrounding area.) Prevent flowing into drain, sewage, basement, and closed area.

Section 7: Handling and storage

Precautions for safe handling;

Technical measures: Provide ventilation system and Use necessary personal protective equipment as described in "Section 8: Exposure controls/personal protection".

Precautions such as local/total ventilation:

Provide local ventilations and a full ventilation system as described in "Section 8: Exposure controls/personal protection".

Precautions for safe handling:

Prohibit the use of heat, sparks, and fire in the surrounding area.

Wash hands thoroughly after handling.

Avoid swallowing.

Avoid the contact with the skin.

Prevention of contact: Refer to "Section 10: Stability and reactivity".

Conditions for safe storage, including any incompatibilities;

Technical measures: The storage facility should be designed with fire-proof construction and beams should use a non-combustible material. The roof of a storage facility should be made of a non-combustible material and use metals or other lightweight non-combustible materials. No ceiling should be installed. The storage floor should be protected from water penetration, or should have

water-proof construction. The storage floor should have penetration-proof construction against dangerous goods and be inclined adequately. A proper sump should be provided to catch any spills. The storage facility should be provided with necessary lighting, lighting equipment, and ventilator to store and handle dangerous goods.

Incompatible materials and mixtures:

Refer to "Section 10: Stability and reactivity".

Conditions for safe storage:

Store away from oxidants. Have containers keep away from direct sunlight and heat. Store in a well-ventilated and cool place keeping container tightly closed. Store locked up.

Packing material: Use containers prescribed in the "UN Transport Regulations".

Section 8: Exposure controls/personal protection

Occupational Exposure Limits;

ACGIH TLV-TWA (2012): 20 ppm, 130 mg/m^3 (Ethylene glycol monobutyl ether acetate)

Appropriate engineering controls;

Use Local exhaust ventilation.

Individual protection measures, such as personal protective equipment;

Respiratory protection:	Respirator to avoid breathing organic solvent vapor.
Hand protection:	Wear chemical resistant gloves.
Eye/ face protection:	Use safety glasses or goggles.
Skin and body protection:	Wear working clothes.
Specific hygiene measures:	Wash hands thoroughly after handling.

General industrial hygiene practice;

Wash hands thoroughly after handling.

Section 9: Physical and chemical properties

Appearance (physical state, color, etc.);	Blue liquid
Odor;	Mild odor
Odor threshold;	No information
pH;	No information
Melting point/freezing point;	No information
Initial boiling point and boiling range;	No information
Flash point;	63°C (Tag closed cup)
Evaporation rate;	No information
Flammability (solid, gas);	Not applicable
Upper/lower flammability or explosive limits;	No information
Vapor pressure;	No information
Vapor density;	No information
Relative density;	0.99-1.02 g/cm^3 (25°C)
Solubility(ies);	Insoluble in water
Partition coefficient: *n*-octanol/water;	No information
Auto-ignition temperature;	> 340°C (Ethylene glycol monobutyl ether acetate)

Decomposition temperature; No information
Viscosity; No information

Section 10: Stability and reactivity

Reactivity; Stable under normal handling condition.
Chemical stability; No hazardous reaction expected under normal handling.
No decomposition if stored and applied as directed.
Possibility of hazardous reactions;
Contact with acids and oxidizing agents may cause hazardous reactions.
Conditions to avoid; Extremely high temperature.
Contact with incompatible materials.
Incompatible materials; Acids and oxidizing agents
Hazardous decomposition products;
Irritant, corrosive and/or toxic gas may be generated by a fire.

Section 11: Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics;
Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

ACUTE TOXICITY: (Oral) rat LD_{50} = 3,000 mg/kg (male)
(Oral) rat LD_{50} = 2,400 mg/kg (female)
(Oral) rat LD_{50} = 1,600 mg/kg
(Oral) rat LD_{50} = 7,000 mg/kg
(Oral) rat LD_{50} = 2,360 mg/kg
(Dermal) rabbit LD_{50} = 1,500 mg/kg
(Inhal) rat LC_{50} > 400 ppm (4h)

CARTINOGENICITY: Considered to be corresponding to IARC Group 3 (unclassifiable as to carcinogenicity in humans) based on the toxicity data on ethylene glycol monobutyl ether, metabolite *in vivo*.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE:
In acute toxicity studies in rats, influences on red blood cells and kidneys (hemoglobinuria, hematuria, decrease in red blood cells and haemoglobin, tubulonecrosis, etc.) were observed. In humans, central nervous depression, metabolic acidosis, decrease of red blood cells and haemoglobin were observed.

SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE:
In a 30-day inhalation study in rats, death, hemoglobinuria, hematuria, decrease of red blood cells and haemoglobin, renal hypertrophy and nephrosis were observed at the range of the guidance value Category 2. In 4-week inhalation study in rats, rabbits and cats, influences related to anemia (decrease in haemoglobin, hematocrit and red blood cells, etc.) were reported at the range of the guidance value Category 2. In 14-week inhalation study in rats and mice with ethylene glycol monobutyl ether (hydrolyzed product of ethylene glycol monobutyl ether acetate in the body), hemolytic anemia and related effects on liver, kidneys, bone marrow, spleen were observed at higher doses correspond to the guidance value Category 2 in both

animals.

Delayed and immediate effects and also chronic effects from short- and long-term exposure;

Harmful in contact with skin.

Causes damage to organs by single exposure and through prolonged or repeated exposure.

Numerical measures of toxicity (such as acute toxicity estimates);

Acute toxicity (dermal) was estimated based on ingredients of the product by additivity formula.

Whether the chemical is listed in the NTP Report on Carcinogens or has been found to be a potential carcinogen in the IARC Monographs, or by OSHA;

IARC: Not listed

NTP Report: Not listed

OSHA: Not listed

Section 12: Ecological information

Ecotoxicity;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Crustacean (*Daphnia magna*): 48-h EC_{50} = 67.5 mg/L

Persistence and degradability;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Ready biodegradable (Degradability after 6.5 days by DOC > 90 %)

Bioaccumulative potential;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Bioaccumulative potential is expected to be low (Fish BCF (est.) = 3.8)

Mobility in soil;

No information

Other adverse effects;

The product should not be allowed to enter drains, water courses or the soil.

Section 13: Disposal considerations

Residual waste: For disposal, conform with the standards provided by related laws and local public bodies. When commissioning the disposal to a disposal company, notify the danger and toxicity thoroughly to the company.

Contaminated container and packaging:

Recycle containers after cleansing, or carry out the disposal under the related laws and regulations and the standards of the local governments. In case of disposal of empty containers, remove the content thoroughly.

Section 14: Transport information

UN number; Not applicable

UN proper shipping name; Not applicable

Transport hazard class(es); Not applicable

Packing group, if applicable; Not applicable

Environmental hazards (e.g., Marine pollutant (Yes/No));

No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code);

Not applicable

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;

When transporting, avoid direct sunlight. Confirm no leakage to containers. Load to prevent falling dropping off or damage containers and take preventive measures of collapse.

Section 15: Regulatory information

OSHA: Hazardous chemical

TSCA inventory: All ingredients in this product are listed on the TSCA Inventory.

SARA Title Ⅲ: This product contains Section 313 (TRI Chemicals):
Glycol ether (considered as a part of ethylene glycol monobutyl ether acetate)

California Prop.65: None of the chemicals in this product are listed on the state of California to cause cancer, birth defects or other reproductive harm.

Section 16: Other information, including date of preparation or last revision

HMIS (Hazardous Material Identification System) Rating:

Health: 1*, Flammability: 2, Physical hazard: 0, Personal protection: H

(0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe, *= chronic hazard)

NFPA (National Fire Protection Association) Rating:

Health: 1, Flammability: 2, Instability: 0

(0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard)

Update history:

Date of issue: July01, 2020

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Literature references: Information of MUTOH INDUSTRIES LTD.
NITE GHS classification results (http://www.safe.nite.go.jp/ghs/list.html).
ACGIH, American Conference of Governmental Industrial Hygienists (2012) TLVs and BEIs.

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SAFETY DATA SHEET

In accordance with OSHA HCS 1910.1200

Section 1: Identification

Product identifier used on the label;

Product Name: Multi Purpose INK Magenta

Other means of identification;

VJ-MP11-MA950/ VJ-MP11-MA500

Recommended use of the chemical and restrictions on use;

Digital printing

Name, address, and telephone number of the supplier;

Name: MUTOH America Inc

Address: 4405 East Baseline Road, Suites 120 Phoenix, Arizona 85042

Contact section: Custmer Care

Telephone number: 480-968-7772

Emergency phone number. 480-968-7772 (During normal opening times)

Section 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of § 1910.1200;

Physical Hazards

FLAMMABLE LIQUIDS Category 4

Health Hazards

ACUTE TOXICITY (DERMAL) Category 4*

* Max. 65 % of the mixture consists of ingredients of unknown acute toxicity.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE

Category 1 (The central nervous system, blood, systemic toxicity),
Category 2 (kidney),

SPECIFIC TARGET ORGAN TOXICITY REPEATED OR PROLONGED EXPOSURE

Category 2 (blood, kidney)

Environmental Hazards

AQUATIC ACUTE TOXICITY Category 3

Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200;

Symbols:

Signal word **Danger**

Hazard Statements
Combustible liquid
Harmful in contact with skin
Causes damage to organs
(The central nervous system, blood, systemic toxicity)
May cause damage to organs (kidney)
May cause damage to organs through prolonged or repeated exposure
(blood, kidney)
Harmful to aquatic life

Precautionary Statements

[Prevention]
Keep away from flames and hot surfaces. - No smoking.
Do not breathe gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

[Response]
IF ON SKIN: Wash with plenty of water and soap.
IF ON SKIN: Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Call a POISON CENTER/doctor.
IF exposed or concerned: Get medical advice/attention if you feel unwell.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry chemicals, carbon dioxide, and alcohol-resistance foam to extinguish.

[Storage]
Store in a well-ventilated place. Keep cool.
Store locked up.

[Disposal]
Dispose of contents/ container in accordance with related laws and local/ regional regulations.

Description of any hazards not otherwise classified;

Contact with eyes may result in irritation.
Contact with skin may result in irritation.
Ingestion may result in gastric disturbance.
Prolonged or repeated inhalation of vapor may cause headaches, dizziness or nausea.

Section 3: Composition/information on ingredients

Compositions (contents of the product)

Chemical name	Wt. %	CAS No.
Ethyl lactate	45 - 55	687-47-8
Ethylene glycol monobutyl ether acetate	35 - 45	112-07-2

Pigment	1 - 10	-
Polymer	1 - 10	-

Section 4: First-aid measures

Necessary first-aid measures by relevant routes of exposure;

IF INHALED: Move to fresh air area. Call a physician.

IF ON SKIN: In case of contact, immediately wash skin with soap and plenty of water. If irritation develops, get medical attention. Remove contaminated clothing and shoes.

IF IN EYES: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If irritation develops, get medical attention.

IF INGESTED: If swallowed, seek medical advice immediately.

Most important symptoms/effects, acute and delayed;

Harmful in contact with skin.

Causes damage to organs by single exposure and through prolonged or repeated exposure.

Indication of immediate medical attention and special treatment needed, if necessary;

No information

Section 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media;

Suitable extinguishing media:

Small fire: Dry chemicals, carbon dioxide, water, sprinkling, and alcohol-resistance foam extinguishing agent.

Large fire: Dry chemicals, carbon dioxide, and alcohol-resistance foam extinguishing agent.

Unsuitable extinguishing media:

Jet water.

Specific hazards arising from the chemical;

Irritant, corrosive and/or toxic gas may be generated by a fire.

Container may explode when heated.

Special protective equipment and precautions for fire-fighters;

Carry out fire-fighting at the safe and effective distance from the fire, or use a unattended hose-holding unit, or a nozzle with a monitor.

In fire-extinguishing activity, wear an appropriate air breathing apparatus and full protective clothing for chemicals.

The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

Section 6: Accidental release measures

Personal precautions, protective equipment, and emergency procedures;

Personal precautions:

Do not touch the leakage, and do not walk on it.

Protective equipment:

Wear appropriate personal protective equipment (Refer to "Section 8: Exposure controls/personal

protection") and avoid inhalation or contact with eyes and skin.

Emergency procedures:

Prohibit unauthorized entry into the area.

If not wearing appropriate personal protective clothing, do not touch the damaged container and leakage.

Environmental precautions:

Do not release into the environment. Pay attention not to cause the influence on the environment by discharging into rivers.

Methods and materials for containment and cleaning up;

In case of small quantity, absorb the leakage with dry soil, sand, and incombustible-material or collect it into a container that can be covered tightly for later disposal. Use clean and anti-static tools to collect absorbed materials. Prevent the material from wetting by rain.

In case of large quantity, prevent the spills from spreading with embankment to lead them to a safe place for collection. Collect the material into a disposal container by sucking up or sweeping up.

All devices to handle spills must be grounded. If not dangerous, stop the leak.

Cover the materials with dry soil, dry sand, or non-combustibles and store under a plastic sheet cover to avoid scattering and wetting.

Clean the contaminated area thoroughly with water after removal.

Prevention measures for secondary accidents;

Remove all ignition sources promptly. (Prohibition of smoking, sparks, and flames in the surrounding area.) Prevent flowing into drain, sewage, basement, and closed area.

Section 7: Handling and storage

Precautions for safe handling;

Technical measures: Provide ventilation system and Use necessary personal protective equipment as described in "Section 8: Exposure controls/personal protection".

Precautions such as local/total ventilation:

Provide local ventilations and a full ventilation system as described in "Section 8: Exposure controls/personal protection".

Precautions for safe handling:

Prohibit the use of heat, sparks, and fire in the surrounding area.

Wash hands thoroughly after handling.

Avoid swallowing.

Avoid the contact with the skin.

Prevention of contact: Refer to "Section 10: Stability and reactivity".

Conditions for safe storage, including any incompatibilities;

Technical measures: The storage facility should be designed with fire-proof construction and beams should use a non-combustible material. The roof of a storage facility should be made of a non-combustible material and use metals or other lightweight non-combustible materials. No ceiling should be installed. The storage floor should be protected from water penetration, or should have

water-proof construction. The storage floor should have penetration-proof construction against dangerous goods and be inclined adequately. A proper sump should be provided to catch any spills. The storage facility should be provided with necessary lighting, lighting equipment, and ventilator to store and handle dangerous goods.

Incompatible materials and mixtures:

Refer to "Section 10: Stability and reactivity".

Conditions for safe storage:

Store away from oxidants. Have containers keep away from direct sunlight and heat. Store in a well-ventilated and cool place keeping container tightly closed. Store locked up.

Packing material: Use containers prescribed in the "UN Transport Regulations".

Section 8: Exposure controls/personal protection

Occupational Exposure Limits;

ACGIH TLV-TWA (2012): 20 ppm, 130 mg/m^3 (Ethylene glycol monobutyl ether acetate)

Appropriate engineering controls;

Use Local exhaust ventilation.

Individual protection measures, such as personal protective equipment;

Respiratory protection:	Respirator to avoid breathing organic solvent vapor.
Hand protection:	Wear chemical resistant gloves.
Eye/ face protection:	Use safety glasses or goggles.
Skin and body protection:	Wear working clothes.
Specific hygiene measures:	Wash hands thoroughly after handling.

General industrial hygiene practice;

Wash hands thoroughly after handling.

Section 9: Physical and chemical properties

Appearance (physical state, color, etc.);	Red liquid
Odor;	Mild odor
Odor threshold;	No information
pH;	No information
Melting point/freezing point;	No information
Initial boiling point and boiling range;	No information
Flash point;	63°C (Tag closed cup)
Evaporation rate;	No information
Flammability (solid, gas);	Not applicable
Upper/lower flammability or explosive limits;	No information
Vapor pressure;	No information
Vapor density;	No information
Relative density;	0.99-1.02 g/cm^3 (25°C)
Solubility(ies);	Insoluble in water
Partition coefficient: *n*-octanol/water;	No information
Auto-ignition temperature;	> 340°C (Ethylene glycol monobutyl ether acetate)

Decomposition temperature; No information
Viscosity; No information

Section 10: Stability and reactivity

Reactivity; Stable under normal handling condition.
Chemical stability; No hazardous reaction expected under normal handling.
No decomposition if stored and applied as directed.
Possibility of hazardous reactions;
Contact with acids and oxidizing agents may cause hazardous reactions.
Conditions to avoid; Extremely high temperature.
Contact with incompatible materials.
Incompatible materials; Acids and oxidizing agents
Hazardous decomposition products;
Irritant, corrosive and/or toxic gas may be generated by a fire.

Section 11: Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics;
Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

ACUTE TOXICITY: (Oral) rat LD_{50} = 3,000 mg/kg (male)
(Oral) rat LD_{50} = 2,400 mg/kg (female)
(Oral) rat LD_{50} = 1,600 mg/kg
(Oral) rat LD_{50} = 7,000 mg/kg
(Oral) rat LD_{50} = 2,360 mg/kg
(Dermal) rabbit LD_{50} = 1,500 mg/kg
(Inhal) rat LC_{50} > 400 ppm (4h)

CARTINOGENICITY: Considered to be corresponding to IARC Group 3 (unclassifiable as to carcinogenicity in humans) based on the toxicity data on ethylene glycol monobutyl ether, metabolite *in vivo*.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE:
In acute toxicity studies in rats, influences on red blood cells and kidneys (hemoglobinuria, hematuria, decrease in red blood cells and haemoglobin, tubulonecrosis, etc.) were observed. In humans, central nervous depression, metabolic acidosis, decrease of red blood cells and haemoglobin were observed.

SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE:
In a 30-day inhalation study in rats, death, hemoglobinuria, hematuria, decrease of red blood cells and haemoglobin, renal hypertrophy and nephrosis were observed at the range of the guidance value Category 2. In 4-week inhalation study in rats, rabbits and cats, influences related to anemia (decrease in haemoglobin, hematocrit and red blood cells, etc.) were reported at the range of the guidance value Category 2. In 14-week inhalation study in rats and mice with ethylene glycol monobutyl ether (hydrolyzed product of ethylene glycol monobutyl ether acetate in the body), hemolytic anemia and related effects on liver, kidneys, bone marrow, spleen were observed at higher doses correspond to the guidance value Category 2 in both

animals.

Delayed and immediate effects and also chronic effects from short- and long-term exposure;

Harmful in contact with skin.

Causes damage to organs by single exposure and through prolonged or repeated exposure.

Numerical measures of toxicity (such as acute toxicity estimates);

Acute toxicity (dermal) was estimated based on ingredients of the product by additivity formula.

Whether the chemical is listed in the NTP Report on Carcinogens or has been found to be a potential carcinogen in the IARC Monographs, or by OSHA;

IARC: Not listed

NTP Report: Not listed

OSHA: Not listed

Section 12: Ecological information

Ecotoxicity;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Crustacean (*Daphnia magna*): 48-h EC_{50} = 67.5 mg/L

Persistence and degradability;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Ready biodegradable (Degradability after 6.5 days by DOC > 90 %)

Bioaccumulative potential;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Bioaccumulative potential is expected to be low (Fish BCF (est.) = 3.8)

Mobility in soil;

No information

Other adverse effects;

The product should not be allowed to enter drains, water courses or the soil.

Section 13: Disposal considerations

Residual waste: For disposal, conform with the standards provided by related laws and local public bodies. When commissioning the disposal to a disposal company, notify the danger and toxicity thoroughly to the company.

Contaminated container and packaging:

Recycle containers after cleansing, or carry out the disposal under the related laws and regulations and the standards of the local governments. In case of disposal of empty containers, remove the content thoroughly.

Section 14: Transport information

UN number; Not applicable

UN proper shipping name; Not applicable

Transport hazard class(es); Not applicable

Packing group, if applicable; Not applicable

Environmental hazards (e.g., Marine pollutant (Yes/No));

No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code);

Not applicable

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;

When transporting, avoid direct sunlight. Confirm no leakage to containers. Load to prevent falling dropping off or damage containers and take preventive measures of collapse.

Section 15: Regulatory information

OSHA: Hazardous chemical

TSCA inventory: All ingredients in this product are listed on the TSCA Inventory.

SARA Title Ⅲ: This product contains Section 313 (TRI Chemicals):
Glycol ether (considered as a part of ethylene glycol monobutyl ether acetate)

California Prop.65: None of the chemicals in this product are listed on the state of California to cause cancer, birth defects or other reproductive harm.

Section 16: Other information, including date of preparation or last revision

HMIS (Hazardous Material Identification System) Rating:

Health: 1*, Flammability: 2, Physical hazard: 0, Personal protection: H

(0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe, *= chronic hazard)

NFPA (National Fire Protection Association) Rating:

Health: 1, Flammability: 2, Instability: 0

(0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard)

Update history:

Date of issue: July01, 2020

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Literature references: Information of MUTOH INDUSTRIES LTD.
NITE GHS classification results (http://www.safe.nite.go.jp/ghs/list.html).
ACGIH, American Conference of Governmental Industrial Hygienists (2012) TLVs and BEIs.

[Disclaimer]

This “Safety Data Sheet” contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of preparation, but should only be used as a guide. It is subject to revision from time to time. MUTOH does not warrant the completeness or accuracy of the information contained herein.

SAFETY DATA SHEET

In accordance with OSHA HCS 1910.1200

Section 1: Identification

Product identifier used on the label;

Product Name: Multi Purpose Ink White

Other means of identification;

VJ-MP11-WH500

Recommended use of the chemical and restrictions on use;

Digital printing

Name, address, and telephone number of the supplier;

Name: MUTOH America Inc

Address: 4405 East Baseline Road, Suites 120 Phoenix, Arizona 85042

Contact section: Custmer Care

Telephone number: 480-968-7772

Emergency phone number. 480-968-7772 (During normal opening times)

Section 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of § 1910.1200;

Physical Hazards

FLAMMABLE LIQUIDS Category 4

Health Hazards

SERIOUS EYE DAMAGE/EYE IRRITATION
Category 2B

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE
Category 1 (The central nervous system, blood, systemic toxicity),
Category 2 (kidney),

SPECIFIC TARGET ORGAN TOXICITY REPEATED OR PROLONGED EXPOSURE
Category 2 (blood, kidney)

Environmental Hazards

AQUATIC ACUTE TOXICITY Category 3

Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200;

Symbols:

Signal word **Danger**

Hazard Statements
Combustible liquid
Causes eye irritation
Causes damage to organs
(The central nervous system, blood, systemic toxicity)
May cause damage to organs (kidney)
May cause damage to organs through prolonged or repeated exposure
(blood, kidney)
Harmful to aquatic life

Precautionary Statements

[Prevention] Keep away from flames and hot surfaces. - No smoking.
Do not breathe gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

[Response] 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: Call a POISON CENTER/doctor.
IF exposed or concerned: Get medical advice/attention if you feel unwell.
In case of fire: Use dry chemicals, carbon dioxide, and alcohol-resistance foam to extinguish.

[Storage] Store in a well-ventilated place. Keep cool.
Store locked up.

[Disposal] Dispose of contents/ container in accordance with related laws and local/ regional regulations.

Description of any hazards not otherwise classified;

Contact with skin may result in irritation.
Ingestion may result in gastric disturbance.
Prolonged or repeated inhalation of vapor may cause headaches, dizziness or nausea.

Section 3: Composition/information on ingredients

Compositions (contents of the product)

Chemical name	Wt. %	CAS No.
Ethyl lactate	45 - 55	687-47-8
Ethylene glycol monobutyl ether acetate	25 – 35	112-07-2
Titanium dioxide	10 - 20	13463-67-7
Polymer	1 - 10	-

Section 4: First-aid measures

Necessary first-aid measures by relevant routes of exposure;

IF INHALED: Move to fresh air area. Call a physician.

IF ON SKIN: In case of contact, immediately wash skin with soap and plenty of water. If irritation develops, get medical attention. Remove contaminated clothing and shoes.

IF IN EYES: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If irritation develops, get medical attention.

IF INGESTED: If swallowed, seek medical advice immediately.

Most important symptoms/effects, acute and delayed;

Causes serious eye irritation.

Causes damage to organs by single exposure and through prolonged or repeated exposure.

Indication of immediate medical attention and special treatment needed, if necessary;

No information

Section 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media;

Suitable extinguishing media:

Small fire: Dry chemicals, carbon dioxide, water, sprinkling, and alcohol-resistance foam extinguishing agent.

Large fire: Dry chemicals, carbon dioxide, and alcohol-resistance foam extinguishing agent.

Unsuitable extinguishing media:

Jet water.

Specific hazards arising from the chemical;

Irritant, corrosive and/or toxic gas may be generated by a fire.

Container may explode when heated.

Special protective equipment and precautions for fire-fighters;

Carry out fire-fighting at the safe and effective distance from the fire, or use a unattended hose-holding unit, or a nozzle with a monitor.

In fire-extinguishing activity, wear an appropriate air breathing apparatus and full protective clothing for chemicals.

The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

Section 6: Accidental release measures

Personal precautions, protective equipment, and emergency procedures;

Personal precautions:

Do not touch the leakage, and do not walk on it.

Protective equipment:

Wear appropriate personal protective equipment (Refer to "Section 8: Exposure controls/personal protection") and avoid inhalation or contact with eyes and skin.

Emergency procedures:

Prohibit unauthorized entry into the area.

If not wearing appropriate personal protective clothing, do not touch the damaged container and leakage.

Environmental precautions:

Do not release into the environment. Pay attention not to cause the influence on the environment by discharging into rivers.

Methods and materials for containment and cleaning up;

In case of small quantity, absorb the leakage with dry soil, sand, and incombustible-material or collect it into a container that can be covered tightly for later disposal. Use clean and anti-static tools to collect absorbed materials. Prevent the material from wetting by rain.

In case of large quantity, prevent the spills from spreading with embankment to lead them to a safe place for collection. Collect the material into a disposal container by sucking up or sweeping up.

All devices to handle spills must be grounded. If not dangerous, stop the leak.

Cover the materials with dry soil, dry sand, or non-combustibles and store under a plastic sheet cover to avoid scattering and wetting.

Clean the contaminated area thoroughly with water after removal.

Prevention measures for secondary accidents;

Remove all ignition sources promptly. (Prohibition of smoking, sparks, and flames in the surrounding area.) Prevent flowing into drain, sewage, basement, and closed area.

Section 7: Handling and storage

Precautions for safe handling;

Technical measures: Provide ventilation system and Use necessary personal protective equipment as described in "Section 8: Exposure controls/personal protection".

Precautions such as local/total ventilation:

Provide local ventilations and a full ventilation system as described in "Section 8: Exposure controls/personal protection".

Precautions for safe handling:

Do not handle until all safety precautions have been read and understood.
Prohibit the use of heat, sparks, and fire in the surrounding area.
Wash hands thoroughly after handling.
Avoid swallowing.
Avoid the contact with the skin.
Do not breathe gas, mist, vapors and spray.
Avoid excessive heat.

Prevention of contact: Refer to "Section 10: Stability and reactivity".

Conditions for safe storage, including any incompatibilities;

Technical measures: The storage facility should be designed with fire-proof construction and beams should use a non-combustible material. The roof of a storage facility should be made of a non-combustible material and use metals or other lightweight non-combustible materials. No ceiling should be installed. The

storage floor should be protected from water penetration, or should have water-proof construction. The storage floor should have penetration-proof construction against dangerous goods and be inclined adequately. A proper sump should be provided to catch any spills. The storage facility should be provided with necessary lighting, lighting equipment, and ventilator to store and handle dangerous goods.

Incompatible materials and mixtures:

Refer to "Section 10: Stability and reactivity".

Conditions for safe storage:

Store away from oxidants. Have containers keep away from direct sunlight and heat. Store in a well-ventilated and cool place keeping container tightly closed. Store locked up.

Packing material: Use containers prescribed in the "UN Transport Regulations".

Section 8: Exposure controls/personal protection

Occupational Exposure Limits;

OSHA PEL:	15 mg/m^3 (Titanium dioxide) (as total dust)
ACGIH TLV-TWA (2012):	10 mg/m^3 (Titanium dioxide)
	20 ppm, 130 mg/m^3 (Ethylene glycol monobutyl ether acetate)

Appropriate engineering controls;

Use Local exhaust ventilation.

Individual protection measures, such as personal protective equipment;

Respiratory protection:	Respirator to avoid breathing organic solvent vapor.
Hand protection:	Wear chemical resistant gloves.
Eye/ face protection:	Use safety glasses or goggles.
Skin and body protection:	Wear working clothes.
Specific hygiene measures:	Wash hands thoroughly after handling.

General industrial hygiene practice;

Wash hands thoroughly after handling.

Section 9: Physical and chemical properties

Appearance (physical state, color, etc.);	White liquid
Odor;	Mild odor
Odor threshold;	No information
pH;	No information
Melting point/freezing point;	No information
Initial boiling point and boiling range;	No information
Flash point;	63°C (Tag closed cup)
Evaporation rate;	No information
Flammability (solid, gas);	Not applicable
Upper/lower flammability or explosive limits;	No information
Vapor pressure;	No information
Vapor density;	No information
Relative density;	1.10-1.15 g/cm^3 (25°C)

Solubility(ies);	Insoluble in water
Partition coefficient: *n*-octanol/water;	No information
Auto-ignition temperature;	> 340°C (Ethylene glycol monobutyl ether acetate)
Decomposition temperature;	No information
Viscosity;	No information

Section 10: Stability and reactivity

Reactivity; Stable under normal handling condition.

Chemical stability; No hazardous reaction expected under normal handling.
No decomposition if stored and applied as directed.

Possibility of hazardous reactions;
Contact with acids and oxidizing agents may cause hazardous reactions.

Conditions to avoid; Extremely high temperature.
Contact with incompatible materials.

Incompatible materials; Acids and oxidizing agents

Hazardous decomposition products;
Irritant, corrosive and/or toxic gas may be generated by a fire.

Section 11: Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

ACUTE TOXICITY: (Oral) rat LD_{50} = 3,000 mg/kg (male)
(Oral) rat LD_{50} = 2,400 mg/kg (female)
(Oral) rat LD_{50} = 1,600 mg/kg
(Oral) rat LD_{50} = 7,000 mg/kg
(Oral) rat LD_{50} = 2,360 mg/kg
(Dermal) rabbit LD_{50} = 1,500 mg/kg
(Inhal) rat LC_{50} (4-hour) > 400 ppm

CARTINOGENICITY: Considered to be corresponding to IARC Group 3 (unclassifiable as to carcinogenicity in humans) based on the toxicity data on ethylene glycol monobutyl ether, metabolite *in vivo*.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE:
In acute toxicity studies in rats, influences on red blood cells and kidneys (hemoglobinuria, hematuria, decrease in red blood cells and haemoglobin, tubulonecrosis, etc.) were observed. In humans, central nervous depression, metabolic acidosis, decrease of red blood cells and haemoglobin were observed.

SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE:
In a 30-day inhalation study in rats, death, hemoglobinuria, hematuria, decrease of red blood cells and haemoglobin, renal hypertrophy and nephrosis were observed at the range of the guidance value Category 2. In 4-week inhalation study in rats, rabbits and cats, influences related to anemia (decrease in haemoglobin, hematocrit and red blood cells, etc.) were reported at the range of the guidance value Category 2. In 14-week inhalation study in rats and mice with ethylene glycol monobutyl ether (hydrolyzed

product of ethylene glycol monobutyl ether acetate in the body), hemolytic anemia and related effects on liver, kidneys, bone marrow, spleen were observed at higher doses correspond to the guidance value Category 2 in both animals.

Information on ingredient (Titanium dioxide):

ACUTE TOXICITY: (Oral) rat LD_{50} 12,000 mg/kg
(Oral) rat LD_{50} > 20,000mg/kg mg/kg
(Dermal) rabbit approx LD_{50} > 10,000 mg/kg
(Inhalation: dust) rat LC_{50} (4-hour) > 6.82 mg/L

SERIOUS EYE DAMAGE/EYE IRRITATION:
Mild irritation in rabbit.

CARTINOGENICITY: Ultrafine particle is classified as IARC Group 2B (possibly carcinogenic to humans)

Delayed and immediate effects and also chronic effects from short- and long-term exposure;

Causes serious eye irritation.
Causes damage to organs by single exposure and through prolonged or repeated exposure.

Numerical measures of toxicity (such as acute toxicity estimates);

Acute toxicity (dermal) was estimated based on ingredients of the product by addirivity formula.

Whether the chemical is listed in the NTP Report on Carcinogens or has been found to be a potential carcinogen in the IARC Monographs, or by OSHA;

IARC: Group 2B (Titanium dioxide (as ultrafine particle))
NTP Report: Not listed
OSHA: Not listed

Section 12: Ecological information

Ecotoxicity;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):
Crustacean (*Daphnia magna*): 48-h EC_{50} = 67.5 mg/L

Persistence and degradability;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):
Ready biodegradable (Degradability after 6.5 days by DOC > 90 %)

Bioaccumulative potential;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):
Bioaccumulative potential is expected to be low (Fish BCF (est.) = 3.8)

Mobility in soil;

No information

Other adverse effects;

The product should not be allowed to enter drains, water courses or the soil.

Section 13: Disposal considerations

Residual waste: For disposal, conform with the standards provided by related laws and local public bodies. When commissioning the disposal to a disposal company, notify the danger and toxicity thoroughly to the company.

Contaminated container and packaging:

Recycle containers after cleansing, or carry out the disposal under the related laws and regulations and the standards of the local governments. In case of disposal of empty containers, remove the content thoroughly.

Section 14: Transport information

UN number; Not applicable

UN proper shipping name; Not applicable

Transport hazard class(es); Not applicable

Packing group, if applicable; Not applicable

Environmental hazards (e.g., Marine pollutant (Yes/No));

No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code);

Not applicable

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;

When transporting, avoid direct sunlight. Confirm no leakage to containers. Load to prevent falling dropping off or damage containers and take preventive measures of collapse.

Section 15: Regulatory information

OSHA: Hazardous chemical

TSCA inventory: All ingredients in this product are listed on the TSCA Inventory.

SARA Title Ⅲ: This product contains Section 313 (TRI Chemicals):
Glycol ether (considered as a part of ethylene glycol monobutyl ether acetate)

California Prop.65:

WARNING: This product can expose you to chemicals including Titanium dioxide, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Section 16: Other information, including date of preparation or last revision

HMIS (Hazardous Material Identification System) Rating:

Health: 1*, Flammability: 2, Physical hazard: 0, Personal protection: H
(0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe, *= chronic hazard)

NFPA (National Fire Protection Association) Rating:

Health: 1, Flammability: 2, Instability: 0

(0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard)

Update history:

Date of issue: July01, 2020

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Literature references: Information of MUTOH INDUSTRIES LTD.
NITE GHS classification results (http://www.safe.nite.go.jp/ghs/list.html).
ACGIH, American Conference of Governmental Industrial Hygienists (2012) TLVs and BEIs.

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SAFETY DATA SHEET

In accordance with OSHA HCS 1910.1200

Section 1: Identification

Product identifier used on the label;

Product Name: Multi Purpose INK Yellow

Other means of identification;

VJ-MP11-YE950/ VJ-MP11-YE500

Recommended use of the chemical and restrictions on use;

Digital printing

Name, address, and telephone number of the supplier;

Name: MUTOH America Inc
Address: 4405 East Baseline Road, Suites 120 Phoenix, Arizona 85042
Contact section: Custmer Care
Telephone number: 480-968-7772

Emergency phone number. 480-968-7772 (During normal opening times)

Section 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of § 1910.1200;

Physical Hazards

FLAMMABLE LIQUIDS Category 4

Health Hazards

ACUTE TOXICITY (DERMAL) Category 4*

* Max. 65 % of the mixture consists of ingredients of unknown acute toxicity.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE

Category 1 (The central nervous system, blood, systemic toxicity),
Category 2 (kidney),

SPECIFIC TARGET ORGAN TOXICITY REPEATED OR PROLONGED EXPOSURE

Category 2 (blood, kidney)

Environmental Hazards

AQUATIC ACUTE TOXICITY Category 3

Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200;

Symbols:

Signal word **Danger**

Hazard Statements
Combustible liquid
Harmful in contact with skin
Causes damage to organs
(The central nervous system, blood, systemic toxicity)
May cause damage to organs (kidney)
May cause damage to organs through prolonged or repeated exposure
(blood, kidney)
Harmful to aquatic life

Precautionary Statements

[Prevention]
Keep away from flames and hot surfaces. - No smoking.
Do not breathe gas/mist/vapors/spray.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

[Response]
IF ON SKIN: Wash with plenty of water and soap.
IF ON SKIN: Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Call a POISON CENTER/doctor.
IF exposed or concerned: Get medical advice/attention if you feel unwell.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry chemicals, carbon dioxide, and alcohol-resistance foam to extinguish.

[Storage]
Store in a well-ventilated place. Keep cool.
Store locked up.

[Disposal]
Dispose of contents/ container in accordance with related laws and local/ regional regulations.

Description of any hazards not otherwise classified;

Contact with eyes may result in irritation.
Contact with skin may result in irritation.
Ingestion may result in gastric disturbance.
Prolonged or repeated inhalation of vapor may cause headaches, dizziness or nausea.

Section 3: Composition/information on ingredients

Compositions (contents of the product)

Chemical name	Wt. %	CAS No.
Ethyl lactate	45 - 55	687-47-8
Ethylene glycol monobutyl ether acetate	35 - 45	112-07-2

Pigment (Nickel compound)	1 - 10	-
Polymer	1 - 10	-

Section 4: First-aid measures

Necessary first-aid measures by relevant routes of exposure;

IF INHALED: Move to fresh air area. Call a physician.

IF ON SKIN: In case of contact, immediately wash skin with soap and plenty of water. If irritation develops, get medical attention. Remove contaminated clothing and shoes.

IF IN EYES: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If irritation develops, get medical attention.

IF INGESTED: If swallowed, seek medical advice immediately.

Most important symptoms/effects, acute and delayed;

Harmful in contact with skin.

Causes damage to organs by single exposure and through prolonged or repeated exposure.

Indication of immediate medical attention and special treatment needed, if necessary;

No information

Section 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media;

Suitable extinguishing media:

Small fire: Dry chemicals, carbon dioxide, water, sprinkling, and alcohol-resistance foam extinguishing agent.

Large fire: Dry chemicals, carbon dioxide, and alcohol-resistance foam extinguishing agent.

Unsuitable extinguishing media:

Jet water.

Specific hazards arising from the chemical;

Irritant, corrosive and/or toxic gas may be generated by a fire.

Container may explode when heated.

Special protective equipment and precautions for fire-fighters;

Carry out fire-fighting at the safe and effective distance from the fire, or use a unattended hose-holding unit, or a nozzle with a monitor.

In fire-extinguishing activity, wear an appropriate air breathing apparatus and full protective clothing for chemicals.

The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

Section 6: Accidental release measures

Personal precautions, protective equipment, and emergency procedures;

Personal precautions:

Do not touch the leakage, and do not walk on it.

Protective equipment:

Wear appropriate personal protective equipment (Refer to "Section 8: Exposure controls/personal

protection") and avoid inhalation or contact with eyes and skin.

Emergency procedures:

Prohibit unauthorized entry into the area.

If not wearing appropriate personal protective clothing, do not touch the damaged container and leakage.

Environmental precautions:

Do not release into the environment. Pay attention not to cause the influence on the environment by discharging into rivers.

Methods and materials for containment and cleaning up;

In case of small quantity, absorb the leakage with dry soil, sand, and incombustible-material or collect it into a container that can be covered tightly for later disposal. Use clean and anti-static tools to collect absorbed materials. Prevent the material from wetting by rain.

In case of large quantity, prevent the spills from spreading with embankment to lead them to a safe place for collection. Collect the material into a disposal container by sucking up or sweeping up.

All devices to handle spills must be grounded. If not dangerous, stop the leak.

Cover the materials with dry soil, dry sand, or non-combustibles and store under a plastic sheet cover to avoid scattering and wetting.

Clean the contaminated area thoroughly with water after removal.

Prevention measures for secondary accidents;

Remove all ignition sources promptly. (Prohibition of smoking, sparks, and flames in the surrounding area.) Prevent flowing into drain, sewage, basement, and closed area.

Section 7: Handling and storage

Precautions for safe handling;

Technical measures: Provide ventilation system and Use necessary personal protective equipment as described in "Section 8: Exposure controls/personal protection".

Precautions such as local/total ventilation:

Provide local ventilations and a full ventilation system as described in "Section 8: Exposure controls/personal protection".

Precautions for safe handling:

Prohibit the use of heat, sparks, and fire in the surrounding area.

Wash hands thoroughly after handling.

Avoid swallowing.

Avoid the contact with the skin.

Prevention of contact: Refer to "Section 10: Stability and reactivity".

Conditions for safe storage, including any incompatibilities;

Technical measures: The storage facility should be designed with fire-proof construction and beams should use a non-combustible material. The roof of a storage facility should be made of a non-combustible material and use metals or other lightweight non-combustible materials. No ceiling should be installed. The storage floor should be protected from water penetration, or should have

water-proof construction. The storage floor should have penetration-proof construction against dangerous goods and be inclined adequately. A proper sump should be provided to catch any spills. The storage facility should be provided with necessary lighting, lighting equipment, and ventilator to store and handle dangerous goods.

Incompatible materials and mixtures:

Refer to "Section 10: Stability and reactivity".

Conditions for safe storage:

Store away from oxidants. Have containers keep away from direct sunlight and heat. Store in a well-ventilated and cool place keeping container tightly closed. Store locked up.

Packing material: Use containers prescribed in the "UN Transport Regulations".

Section 8: Exposure controls/personal protection

Occupational Exposure Limits;

ACGIH TLV-TWA (2012): 20 ppm, 130 mg/m^3 (Ethylene glycol monobutyl ether acetate)

Appropriate engineering controls;

Use Local exhaust ventilation.

Individual protection measures, such as personal protective equipment;

Respiratory protection:	Respirator to avoid breathing organic solvent vapor.
Hand protection:	Wear chemical resistant gloves.
Eye/ face protection:	Use safety glasses or goggles.
Skin and body protection:	Wear working clothes.
Specific hygiene measures:	Wash hands thoroughly after handling.

General industrial hygiene practice;

Wash hands thoroughly after handling.

Section 9: Physical and chemical properties

Appearance (physical state, color, etc.);	Yellow liquid
Odor;	Mild odor
Odor threshold;	No information
pH;	No information
Melting point/freezing point;	No information
Initial boiling point and boiling range;	No information
Flash point;	63°C (Tag closed cup)
Evaporation rate;	No information
Flammability (solid, gas);	Not applicable
Upper/lower flammability or explosive limits;	No information
Vapor pressure;	No information
Vapor density;	No information
Relative density;	0.99-1.02 g/cm^3 (25°C)
Solubility(ies);	Insoluble in water
Partition coefficient: *n*-octanol/water;	No information
Auto-ignition temperature;	> 340°C (Ethylene glycol monobutyl ether acetate)

Decomposition temperature; No information
Viscosity; No information

Section 10: Stability and reactivity

Reactivity; Stable under normal handling condition.
Chemical stability; No hazardous reaction expected under normal handling.
No decomposition if stored and applied as directed.
Possibility of hazardous reactions;
Contact with acids and oxidizing agents may cause hazardous reactions.
Conditions to avoid; Extremely high temperature.
Contact with incompatible materials.
Incompatible materials; Acids and oxidizing agents
Hazardous decomposition products;
Irritant, corrosive and/or toxic gas may be generated by a fire.

Section 11: Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics;
Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

ACUTE TOXICITY: (Oral) rat LD_{50} = 3,000 mg/kg (male)
(Oral) rat LD_{50} = 2,400 mg/kg (female)
(Oral) rat LD_{50} = 1,600 mg/kg
(Oral) rat LD_{50} = 7,000 mg/kg
(Oral) rat LD_{50} = 2,360 mg/kg
(Dermal) rabbit LD_{50} = 1,500 mg/kg
(Inhal) rat LC_{50} > 400 ppm (4h)

CARTINOGENICITY: Considered to be corresponding to IARC Group 3 (unclassifiable as to carcinogenicity in humans) based on the toxicity data on ethylene glycol monobutyl ether, metabolite *in vivo*.

SPECIFIC TARGET ORGAN TOXICITY SINGLE EXPOSURE:
In acute toxicity studies in rats, influences on red blood cells and kidneys (hemoglobinuria, hematuria, decrease in red blood cells and haemoglobin, tubulonecrosis, etc.) were observed. In humans, central nervous depression, metabolic acidosis, decrease of red blood cells and haemoglobin were observed.

SPECIFIC TARGET ORGAN TOXICITY REPEATED EXPOSURE:
In a 30-day inhalation study in rats, death, hemoglobinuria, hematuria, decrease of red blood cells and haemoglobin, renal hypertrophy and nephrosis were observed at the range of the guidance value Category 2. In 4-week inhalation study in rats, rabbits and cats, influences related to anemia (decrease in haemoglobin, hematocrit and red blood cells, etc.) were reported at the range of the guidance value Category 2. In 14-week inhalation study in rats and mice with ethylene glycol monobutyl ether (hydrolyzed product of ethylene glycol monobutyl ether acetate in the body), hemolytic anemia and related effects on liver, kidneys, bone marrow, spleen were observed at higher doses correspond to the guidance value Category 2 in both

animals.

Information on ingredient (Nickel compounds):

CARTINOGENICITY: IARC Group1(Not possible to classify as a printing ink)

Delayed and immediate effects and also chronic effects from short- and long-term exposure;

Harmful in contact with skin.

Causes damage to organs by single exposure and through prolonged or repeated exposure.

Numerical measures of toxicity (such as acute toxicity estimates);

Acute toxicity (dermal) was estimated based on ingredients of the product by additivity formula.

Whether the chemical is listed in the NTP Report on Carcinogens or has been found to be a potential carcinogen in the IARC Monographs, or by OSHA;

IARC: Listed (Group 1: Nickel compounds,)

NTP Report: Not listed

OSHA: Not listed

Section 12: Ecological information

Ecotoxicity;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Crustacean (*Daphnia magna*): 48-h EC_{50} = 67.5 mg/L

Persistence and degradability;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Ready biodegradable (Degradability after 6.5 days by DOC > 90 %)

Bioaccumulative potential;

Information on product: No information

Information on ingredient (Ethylene glycol monobutyl ether acetate):

Bioaccumulative potential is expected to be low (Fish BCF (est.) = 3.8)

Mobility in soil;

No information

Other adverse effects;

The product should not be allowed to enter drains, water courses or the soil.

Section 13: Disposal considerations

Residual waste: For disposal, conform with the standards provided by related laws and local public bodies. When commissioning the disposal to a disposal company, notify the danger and toxicity thoroughly to the company.

Contaminated container and packaging:

Recycle containers after cleansing, or carry out the disposal under the related laws and regulations and the standards of the local governments. In case of disposal of empty

containers, remove the content thoroughly.

Section 14: Transport information

UN number; Not applicable

UN proper shipping name; Not applicable

Transport hazard class(es); Not applicable

Packing group, if applicable; Not applicable

Environmental hazards (e.g., Marine pollutant (Yes/No));

No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code);

Not applicable

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;

When transporting, avoid direct sunlight. Confirm no leakage to containers. Load to prevent falling dropping off or damage containers and take preventive measures of collapse.

Section 15: Regulatory information

OSHA: Hazardous chemical

TSCA inventory: All ingredients in this product are listed on the TSCA Inventory.

SARA Title Ⅲ: This product contains Section 313 (TRI Chemicals):
Glycol ether (considered as a part of ethylene glycol monobutyl ether acetate), Nickel compounds

California Prop.65:  **WARNING:** This product can expose you to chemicals including Nickel compounds, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Section 16: Other information, including date of preparation or last revision

HMIS (Hazardous Material Identification System) Rating:

Health: 1*, Flammability: 2, Physical hazard: 0, Personal protection: H

(0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe, *= chronic hazard)

NFPA (National Fire Protection Association) Rating:

Health: 1, Flammability: 2, Instability: 0

(0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard)

Update history:

Date of issue: July01, 2020

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Literature references: Information of MUTOH INDUSTRIES LTD.
NITE GHS classification results (http://www.safe.nite.go.jp/ghs/list.html).
ACGIH, American Conference of Governmental Industrial Hygienists (2012) TLVs and BEIs.

[Disclaimer]

This “Safety Data Sheet” contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The

information contained herein is believed to be accurate at the time of preparation, but should only be used as a guide. It is subject to revision from time to time. MUTOH does not warrant the completeness or accuracy of the information contained herein.