

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Retarder MG/Printgen MG
General Use: May be used for printing on textile
Product Description: Anti-drying Agent
MSDS Number: US-034-MICI

MANUFACTURER

Company Name: Matsui Shikiso Chemical Co., Ltd.
Address: 64 Kamikazan-sakuradani-cho, Yamashina-ku, Kyoto 607-8466, JAPAN
Telephone No.: +81(75)594-5612

AGENCY:

Matsui International Co., Inc.
Address: 1501 West 178th Street, Gardena, CA 90248, USA
Telephone No.: (310) 767-7812

EMERGENCY TELEPHONE NUMBER: (310) 767-7812

2. HAZARDS IDENTIFICATION

Emergency Overview

Color: Colorless
Physical State: Liquid.
Odor: Odorless
Hazards of product: No significant immediate hazards for emergency response are known.
OSHA Hazard Communication Standard:

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause slight temporary eye irritation. Corneal injury is unlikely. Mist may cause eye irritation.
Skin Contact: Prolonged contact is essentially nonirritating to skin. Repeated contact may cause flaking and softening of skin.
Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Inhalation: At room temperature, exposure to vapor is minimal due to low volatility. Mist may cause irritation of upper respiratory tract (nose and throat).
Ingestion: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

Effects of Repeated Exposure:

In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

3. COMPOSITION INFORMATION

Component	CAS #	Amount
Propylene glycol	57-55-6	> 99.8 %

4. FIRST-AID MEASURES

Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Skin Contact:	Wash skin with plenty of water.
Inhalation:	Move person to fresh air; if effects occur, consult a physician.
Ingestion:	No emergency medical treatment necessary.
Notes to Physician:	No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
Emergency Personnel Protection:	If potential for exposure exists refer to Section 8 for specific personal protective equipment.

5. FIRE FIGHTING MEASURES

Extinguishing Media:	Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Fire Fighting Procedures:	Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.
Special Protective Equipment for Firefighters:	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.
Unusual Fire and Explosion Hazards:	Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.
Hazardous Combustion Products:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken if Material is Released or Spilled:	Contain spilled material if possible. Small spills: Any absorbent material. Collect in suitable and properly labeled open containers. Wash the spill site with large quantities of water.
Large spills:	Dike area to contain spill. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.
Personal Precautions:	Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. HANDLING AND STORAGE

Handling

General Handling: Product handled hot may require additional ventilation or local exhaust. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Other Precautions: Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Storage: Store away from direct sunlight or ultraviolet light. Keep container tightly closed when not in use. Store in a dry place. Protect from atmospheric moisture. Store in the following material(s): Stainless steel. Aluminum. Plaste 3066 lined container. 316 stainless steel. Opaque HDPE plastic container.

Shelf life: Use within Maximum storage temperature 24 Months 40C°

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

Component	List	Type	Value
Propylene glycol	WEEL	TWA	10 mg/m ³ Aerosol.

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin Protection: No precautions other than clean body-covering clothing should be needed.

Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Liquid.

Color:	Colorless
Odor:	Odorless
Odor Threshold:	No test data available
Flash Point:	Closed Cup 103C° (217F°) Literature. (PMCC)

Flammability (solid, gas):	Not applicable to liquids
Flammable Limits In Air	
Lower:	2.6 %(V) Estimated.
Upper:	12.5 %(V) Estimated.
Autoignition Temperature:	371C° (700F°) Literature.
Vapor Pressure:	0.3 mbar @ 25C° Literature.
Boiling Point (760 mmHg):	187.4C° (369.3F°) Literature.
Vapor Density (air = 1):	2.62 Literature
Specific Gravity (H2O = 1):	1.04 20C°/20C° Literature.
Freezing Point:	No test data available
Melting Point :	No test data available
Solubility in water: (by weight)	100 % Estimated.
pH	Not applicable
Decomposition:	No test data available
Partition coefficient, n-: octanol /water (log Pow)	0.92 Measured
Evaporation Rate: (Butyl 0.01 Estimated. Acetate = 1)	No test data available
Dynamic Viscosity:	48.6 mPs @ 25C° Literature.
Kinematic Viscosity:	No test data available
Pour point:	< -57C° (< -71F°) Literature.

10. STABILITY AND REACTIVITY

Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7.

Hygroscopic

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose.
Generation of gas during decomposition can cause pressure in closed systems.
Avoid direct sunlight or ultraviolet sources.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous Polymerization: Will not occur.

Thermal Decomposition: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to; Aldehydes. Alcohols. Ethers. Organic acids.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Ingestion: LD50, Rat > 20,000 mg/kg

Skin Absorption: LD50, Rabbit > 20,000 mg/kg

Inhalation: No deaths occurred following exposure to a saturated atmosphere.
LC50, 8 h, Vapor, Rat 4.1 mg/l

Sensitization

Skin: Did not cause allergic skin reactions when tested in humans.

Respiratory: No relevant information found.

Repeated Dose Toxicity: In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

Chronic Toxicity and Carcinogenicity:

Did not cause cancer in laboratory animals.

Developmental Toxicity: Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive Toxicity: In animal studies, did not interfere with reproduction. In animal studies,

Genetic Toxicology: did not interfere with fertility.
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE

Movement & Partitioning

Bioaccumulation: Bioconcentration potential is low ($BCF < 100$ or $\log Pow < 3$).
Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Henry's Law Constant (H): $1.2E-08 \text{ atm}\cdot\text{m}^3/\text{mole}$ Measured
Partition coefficient, n-octanol/water ($\log Pow$): -0.92 Measured
Partition coefficient, soil organic carbon/water (Koc): < 1 Estimated.

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
$1.28E-11 \text{ cm}$	3/s 10 h	Estimated.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
81 %	28 d	OECD 301F Test
96 %	64 d	OECD 306 Test

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
69%	70%	86%	

Chemical Oxygen Demand: 1.53 mg/mg

Theoretical Oxygen Demand: 1.68 mg/mg

ECOTOXICITY

Material is practically non-toxic to aquatic organisms on an acute basis
($LC50/EC50/EL50/LL50 > 100 \text{ mg/L}$ in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, rainbow trout (*Oncorhynchus mykiss*), 96 h: $44,000 - 51,600 \text{ mg/L}$

Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia magna*, 48 h, immobilization: $4,850 - 34,000 \text{ mg/L}$

Aquatic Plant Toxicity

EC50, green alga *Pseudokirchneriella subcapitata*
(formerly known as *Selenastrum capricornutum*), biomass growth inhibition: $19,000 \text{ mg/L}$

Toxicity to Micro-organisms

EC50; bacteria, Growth inhibition, 16 h: $26,000 \text{ mg/l}$
EC50, OECD 209 Test; activated sludge, respiration inhibition, 3 h: $> 1,000 \text{ mg/L}$

13. DISPOSAL CONSIDERATIONS

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES

HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device.

14. TRANSPORT INFORMATION

DOT Non-Bulk: NOT REGULATED
DOT Bulk: NOT REGULATED
IMDG: NOT REGULATED
ICAO/IATA: NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative.

It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Propylene glycol	57-55-6	> 99.8 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

16. OTHER INFORMATION

Hazard Rating System

NFPA	Health	Fire	Reactivity
	0	1	0

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

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