Safety Data Sheets

1. Identification

Product Name	: IJ Primer PR-200
Order No.	: PR200-Z-22 / PR200-Z-60 / PR200-Z-BA / PR200-Z-B2
General Use	: Primer for ink jet printer
Product Description	: The undercoating liquid
SDS Number	: 037-O060306
Manufacture	
Company Name	: Mimaki Engineering Co., Ltd.
Address	: 2182-3 Shigeno-otsu, Tomi-shi, Nagano 389-0512 JAPAN
Telephone No.	: +81-268-64-2413
Importer / Distributor Established in USA	
Company Name	: MIMAKI USA, INC.
Address	: 150 Satellite Boulevard, suite A, Suwanee, Georgia 30024, U.S.A.
Telephone No.	: +1-678-730-0700
Emergency Telephone No.	: +81-268-64-2281

2. Hazards Identification

[HCS Classification]

Physical Hazards

Flammable Liquids	: Not classified
Substances and Mixtures, which in Contact with Water, Emit Flammable Gases	: Not classified

Health Hazards

Skin Corrosion / Irritation	: Category 2
Eye Damage / Irritation	: Category 2
Sensitization – Skin	: Category 1
Carcinogenicity	: Category 2
Toxic to Reproduction	: Category 2

Environmental Hazards

Hazardous to the Aquatic Environment - Acute Hazard	: Category 2
Hazardous to the Aquatic Environment - Long Term Hazard	: Category 2

The above list does not include category being non-classifiable or not-applicable.

[GHS Label Elements]

Symbol

Signal Word

Warning

Hazard Statements

H315 Causes skin irritation
H317 May cause an allergic skin reaction
H319 Causes serious eye irritation
H351 Suspected of causing cancer
H361 Suspected of damaging fertility or the unborn child
H411 Toxic to aquatic life with long lasting effects

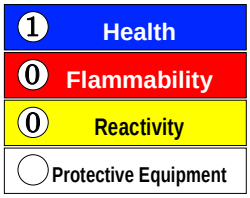
Precautionary Statements

[Prevention]
P201 Obtain SDS (Safety Data Sheet) and printer's operation manual before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing gas/mist/vapours.
P264 Wash hands and eyes thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
[Response]
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P321 Specific treatment (see 4-Response on our website/SDS URL: www.mimaki.co.jp/sds).
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/ attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
[Storage]
P405 Store locked up.
[Disposal]

P501 Dispose of contents and container in accordance with local, regional, national and international regulation (to be specified).

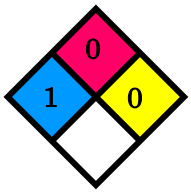
HMIS Rating (scale 0 – 4)

Health = 1
Flammability= 0
Reactivity = 0
Protective Equipment =



NFPA Rating (scale 0 – 4)

Health = 1
Flammability = 0
Instability = 0
Special =



3. Composition / Information on Ingredients

No	Chemical Name	Wt%	CAS No.
1	Aliphatic monomer	40-50	Trade Secret
2	Acrylic oligomer	25-35	Trade Secret
3	Aromatic monomer	15-25	Trade Secret
4	Photo-initiator	<10	Trade Secret
5	Additives	<10	Trade Secret

*Acrylic oligomer contains acrylic acid and toluene. And aromatic monomer contains phenyl glycidyl ether

4. First Aid Measures

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/ attention if you feel unwell. Get medical advice/ attention if experiencing respiratory symptom. Cover body with blanket to warm and keep at rest. Perform CPR if not breathing.

Eye Contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse with clean water for at least 15 minutes and then seek medical attention if necessary. When rinsing, open your eyelids with fingers to insure saturation of water. Seek medical attention if the problem persists.

Skin Contact	: Remove/ Take off all contaminated clothing immediately. Wash with plenty of soap and water. Get immediate medical advice/ attention, if skin irritation or rash occurs.
Ingestion	: Rinse mouth. Do not give an unconscious person anything to drink. Get immediate medical advice/ attention. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Do not induce vomiting.
Protection To First-Aiders	: Wear appropriate protective equipment if necessary.

5. Fire Fighting Measures

Flammable Properties	: Flash point : Approx 106 ℃ Ignition point : Not available Flammable point : Not available
Extinguishing Media	: <u>Suitable extinguishing media</u> Fire-extinguishing powder, fire-fighting foam, carbon dioxide, sand, water spray <u>Unsuitable extinguishing media</u> High pressure water jet.
Specific hazards arising from product	: When exposed to high temperatures, this product may generate dangerous decompositions such as nitrogen oxides carbon monoxide, carbon dioxide, and sulfur dioxide.
Specific extinguish measures	: Cut off the combustion source to the origin of fire and extinguish by using the appropriate fire extinguishing media. Firefighting measures should be done from windward as much as possible. Take appropriate measures to disallow substances that may affect the environment from being dispersed by the drainage. Remove all containers possible to a safe place promptly. If not possible to remove, cool down the area. Work from windward and avoid inhaling any harmful gases. Use respiratory equipment if necessary.

Special protective equipment and precautions	: Cut off the combustion source to the origin of fire and extinguish by using extinguishing media. Combustion / Flue gases generate carbon monoxide and etc. To avoid the fire from spreading, cool surrounding area with water spray. Extinguish from windward and avoid inhaling any harmful gases. Use respiratory equipment if necessary. Extinguish from the windward where the gases do not accumulate and prevent the leakage from spreading. Wear appropriate protective wear (heat-proof) including air respirators. Wear respiratory equipment for harmful gases are produced from combustion or high temperature.

6. Accidental Release Measures

Personal Precautions	: Avoid breathing gas / mist/vapours. Wear protective equipment (boots, gloves, and glasses) to prevent contact with skin. Remove ignition sources in the area and work from windward. Clean up immediately when it spills on the floor or any surface. (The floor surface becomes slippery). Prohibit entry other than related personnel. Ventilate released area. Do not touch and/or walk in the spills. The worker wears an appropriate protective equipment, and avoids eyes, the skin contacts, and inhalations. (refer to Section 8) Provide adequate ventilation if indoors. Cordon off the area and prevent entry of non-related personnel. Work from windward and remove personnel downwind of the area. Wear appropriate protective equipment to prevent contact with skin and inhaling fumes. Remove ignition sources in the area promptly. Prepare fire extinguishing equipment in case of ignition.
Environmental precautions	: Avoid releasing to the environment. Collect spillage. Do not empty into drain. If it is mixed with wastewater, drain it after the activated sludge process. Be careful not to influence living organisms and water quality in the environment by products released into rivers and any type of body of water. Contact local authorities if it is flowing into rivers or any type of body of water as necessary. Be careful not to influence the environment by products released into rivers or any type of body of water. If the pollution of water pipes or

waterways occur, contact relevant organizations. Clean the area and avoid entry into plumbing system. Be careful not to drain or release untreated waste water into the environment.

Methods and materials for recovery and neutralization : Contain the flow path with blankets or sand bags and collect into an appropriate container for large spills. Gather and collect into a container for small spills. Prevent the inflow into drains, sewer, basement, or enclosed areas. Clean spills frequently as there is danger of slipping on remnants. Remove all ignition sources. Smoking, open flame or ignition sources are not allowed in the area. Contain with consideration to safety. Collect into open container by absorbing with cloths, rags, sand or etc. and then rinse with plenty of water. Collect what has scattered into a container that can be sealed. Clean the spilled area with a cloth or a rag. Wear appropriate protective equipment throughout the process.

7. Handling and Storage

Relevant regulation shall be subject to where this product will be handled and stored.

Handling : Work in accordance with the Occupational Safety and Health Act and related laws and regulations. Keep the concentration below the allowed limit. Avoid inhalation and contact. Wear protection if risk of exposure occurs. Use only in a well-ventilated area. Avoid smoking, open flames, heat and sources of ignition. Always cleanse with soap and water after handling. Determine proper procedures for compliance. Seal container after use. Avoid leakage, overflow, dispersal and generating steam without any good reason. Avoid improper handling like tipping over, dropping, strong impact to or dragging the container. Wash hands thoroughly and rinse mouth after handling. Do not eat, drink or smoke when using this product. Do not carry contaminated gloves and protective equipment into rest / break areas. Prohibit entry to work areas other than related personnel. Collect used containers in a defined / fixed area. Use containers that are not damaged, corroded or cracked. Use local exhaust ventilation systems indoors work areas. Wear proper protective equipment to avoid inhalation and contact with eyes and

skin.

Storage : Store in a well-ventilated area. Protect from sunlight (Ultra Violet-light). Keep container tightly closed. Keep cool. Store in a dark light-safe area. Do not freeze. Store locked up.

8. Exposure Controls / Personal Protection

Exposure Limit Values : Not specified

No	Chemical Name		TWA
1	Acrylic compound	ACGIH	2ppm
2	Aromatic compound	OSHA	10ppm
		ACGIH	0.1ppm
3	Additives	ACGIH	2mg/m³(IFV)

TWA : Time Weighted Average, IFV : As inhalable fraction and vapor.

Exposure Controls

Occupational Exposure Controls

Engineering Controls : In the case of indoor use, contain at the source or install a local exhaust system. Provide safety shower and eye / hand wash stations and identify the area clearly. Contain at the source and install a local exhaust system if dust is generated.

Personal Protection : Wear following protective equipment as necessary and accordingly. Inspect equipment on a regular basis by using a protective equipment maintenance chart.

Respiratory Protection : Supplied air respirator, air/ oxygen breathing apparatus, organic vapor gas mask

Hand Protection : Wearing gloves that organic solvents or chemicals do not penetrate is preferred.

Eye Protection : Wear coverall, chemical goggles and face shield when handling.

Skin Protection : Wearing protective clothing (long sleeve uniform) that organic solvent or the chemical do not infiltrate easily preferred.

Environmental Exposure Controls : Not available

9. Physical and Chemical Properties

Appearance	- Physical State	: liquid
	- Color	: Yellow
Odor		: Faint
pH		: Not Applicable
Boiling Point / Boiling Range		: Approx 181℃
Melting Point / Melting Range		: Not available
Flash Point		: Approx 106℃
Relative Density		: Approx 1.1mg/cm^3
Solubility		: Not available
Water Solubility		: Not available
Partition Coefficient (n-octanol / Water)		: Not available
Viscosity		: Not available

10. Stability and Reactivity

Reactivity	: Decomposes upon heating and produces carbon dioxide and carbon monoxide.
Conditions to Avoid	: Sunlight, heat, open flame, high temperature, sparks, static electricity, other sources of ignition.
Stability	: Stable under normal conditions.
Materials to Avoid	: Incompatible with acid, alkali, amines and is prohibited to mix with.

Hazardous Reactions / Decomposition Products : Carbon monoxide (CO), carbon dioxide (CO2) gas might be generated by combustion. Vapor from organic solvents.

11. Toxicological Information

Acute Toxicity : ORAL

Aliphatic compound	LD50(rat) : 4890 mg/kg
Acrylic compound	LD50(rat) : >2000 mg/kg
Photo-initiator	LD50(rat) : >2000 mg/kg

: DERMAL

Aliphatic compound	LD50(rat) : >5000 mg/kg
Acrylic compound	LD50(rat) : >2000 mg/kg
Photo-initiator	LD50(rat) : >2000 mg/kg

Eye Irritation : Causes severe eye irritation. Category 2 as a product.

Aliphatic compound	This ingredient was reported of mild ocular irritating property in the eye irritation tests in the rabbits.
Aromatic compound	This ingredient was reported of severe ocular irritating property in the eye irritation tests.

Skin Irritation : Causes moderate skin irritation. Category 2 as a product.

Aliphatic compound	This ingredient was reported of moderate ocular irritating property in the skin irritation tests in the rabbits.
Acrylic compound	This ingredient was reported of moderate ocular irritating property in the skin irritation tests in the rabbits. (P.I.I:2.0)
Aromatic compound	This ingredient was reported of moderate ocular irritating property in the skin irritation tests.

Skin Sensitization : May cause an allergic skin reaction. Category 1 as a product.

Aromatic compound	This ingredient have skin sensitization.
Photo-initiator	This ingredient showed positive by skin sensitization test in guinea pig.

Mutagenicity : No information available.

Carcinogenicity : Suspected of causing cancer. Category 2 as a product.

Aromatic compound	IARC : 2B (Possibly carcinogenic to Humans)
	ACGIH : A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
	EU : 3 (Possibly carcinogenic to Humans)
	Proposition 65 : Chemical known to cause cancer.

Reproductive and Developmental Toxicity

: Suspected of damaging fertility or the unborn child. Category 2 as a product.

Aromatic compound	This ingredient suspected of damaging fertility or the unborn child.
	Proposition 65 : Reproductive toxicity substance

Specific Target Organ Toxicity (Single Exposure)

: No information available.

Specific Target Organ Toxicity (Repeated Exposure)

: No information available.

Aspiration hazard : No information available.

12. Ecological Information

Handling is noted because it might influence the environment when leaking and abandoning it.

Especially, note that the product doesn't flow directly to ground, the river, and the drain ditch.

Ecotoxicity : Toxic to aquatic life.

Aliphatic compound	Eco-toxicity data Crustacea species : Ceriodaphnia dubia : EC50(48h) 1-10mg/l

Bioaccumulative Potential : No information as a product.

Photo-initiator	No rapidly biodegradable substance.
Additives	No rapidly biodegradable substance.

13. Disposal Considerations

: Comply with all USA, national and local regulations. A contaminated container and packing are disposed of after removing extraneous matter thoroughly. Follow all regulations in your country or regions.

Do not dump this product into sewers, on the ground or into any body of water.

14. Transport Information

Use a container provided for in the UN Recommendations on the TDG Model Regulations. Avoid direct sunlight during transportation. Confirm the container has no damage, corrosion, leakage before transportation. Take measures to prevent the load from tipping, falling and damages. Follow all regulations on the transport in your countries regions. Verify the container as no leaks when transporting and take preventative measure when loading so that the cargo does not tip, fall or get damaged during transit.

UN Number	: 3082
Proper Shipping Name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE LIQUID N.O.S
Transport hazard class(es)	: 9 (Miscellaneous dangerous substances & articles)
Packing Group(PG)	: III
Marine Pollutant	: Yes (Product)
Remarks	: Single or inner packaging less than 5 L (liquid) or 5 kg net (solids) is excepted from Dangerous Goods regulations. Refer to ICAO/IATA A197, IMDG 2.10.2.7, ADR SP 375.

15. Regulatory Information

Classified and labeling in accordance with OSHA HCS (29CFR 1910,1200), revised in 2012:
See section

TSCA Status :

Chemical name	TSCA INVENTORY
Aliphatic monomer	Listed
Acrylic oligomer	No Listed
Aromatic monomer	Listed
Photo-initiator	Listed
Additives	Listed

SNUR Components : Not Applicable

Cancerogenity categories : EPA (Environmental Protection Agency)
II : Toluene
TLV (Threshold Limit Value established by ACGIH)
A3 : Phenyl glycidyl ether
A4 : Acrylic acid, Toluene
NIOSH-Ca (National Institute for Occupational Safety and Health)
Phenyl glycidyl ether

CERCLA Hazardous Substances (40 CFR 117, 302) : Acrylic acid, Toluene

Section 311/312 (40 CFR 370) : None of the ingredient is listed.

Section 313 (40 CFR 372) : Acrylic acid, Toluene

※Acrylic acid and Toluene are not applicable for less than regulation level.

California Proposition 65 : Chemicals known to cause cancer : Phenyl glycidyl ether
Chemicals known to cause reproductive toxicity for females: Toluene
Chemicals known to cause reproductive toxicity for males:
Phenyl glycidyl ether
Chemicals known to cause development toxicity : Toluene

Others Please refer to any other federal, state and local regulations.

16. Other Information

References

1) Guide to Occupational Exposure Values (ACGIH 2014)
2) Registry of Toxic Effects of Chemical Substances (CCOHS)
3) SDS published by manufacturer of the product

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of Mimaki Engineering Corporation.
It relates only to the specific material designated herein, and does not relate to use in combination with any other material or process.
Mimaki Engineering Corporation assumes no legal responsibility for use or reliance upon this information.