

Material Safety Data Sheets

Page 1 of 8

1. Product and Company Identification

Product Name	: Discharge liquid 2
Product Code	: SPC-0540
General Use	: Ink jet printing ink
Product Description	: Discharge liquid
MSDS Number	: 031-33W119C
Manufacture	
Company Name	: Mimaki Engineering Co., Ltd
Address	: 2182-3 Otsu, Shigeno, 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.	: 1-678-730-0100
Emergency Telephone No.	: +81-268-64-2413

2. Hazards Identification

Emergency Overview	: Colorless transparent liquid Sulfur odor
Potential Health Effects	
Inhalation	: Harmful by inhalation.
Eye Contact	: Irritating to eyes.
Skin Contact	: Irritating to skin. Harmful in contact with skin.
Ingestion	: Harmful if swallowed.
Carcinogens	: Formaldehyde OSHA: Z, IARC: 1, NTP: R
Potential Environmental Effects	: Harmful to aquatic organisms. (Formaldehyde)

Material Safety Data Sheets

3. Composition / Information On Ingredients

No	Chemical Name	Wt%	CAS No.	Chemical Formula
1	Reducing agent	4-8	Trade Secret	Trade Secret
2	(Formaldehyde)*	1.2	50-00-0	CH ₂ O
3	Glycols	10-20	Trade Secret	Trade Secret
4	Ethanol, 2,2',2''-nitrilotris-	3-7	102-71-6	C ₆ H ₁₅ NO ₃
5	2-Pyrrolidinone, 1-methyl-	3-7	872-50-4	C ₅ H ₉ NO
6	Ethanol, 2-(2-methoxyethoxy)-	3-7	111-77-3	C ₅ H ₁₂ O ₃
7	Surface-active agent	4-8	Trade Secret	Trade Secret
8	Others	1-3	Trade Secret	Trade Secret
9	Water	55-65	7732-18-5	H ₂ O

*Formaldehyde : Reducing agent is decomposed and generated with heat. This ink contains less than 1%.

OSHA Hazardous Components : Component 2 is hazardous components.
(29 CFR 1910. 1200)

4. First Aid Measures

- Inhalation : Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
- Eye Contact : First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
- Skin Contact : Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
- Ingestion : Please wash the inside of a mouth with water. Please receive diagnosis of a doctor immediately. Do not make it vomit by force. Never give anything by mouth to an unconscious person.
- Protection To First-Aiders : A rescuer needs to wear protective equipments, such as latex gloves and sealing goggles.
- Note To Physician : Formaldehyde occurs by heat press at the time of this product use. Formaldehyde stimulates eyes by the atmosphere density of 20ppm.

Material Safety Data Sheets

5. Fire Fighting Measures

Flammable Properties	: Flash Point: Noncombustible Explosion Limit: Not applicable The harmful gas such as the carbon monoxide is included in the flue gas of the cartridge and this product.
Extinguishing Media	: Water spray, Dry Chemical, Carbon oxide,
Fire Fighting Instructions	: Wear full fire-fighting turn-out gear (full bunker gear) and respiratory protection (self-contained breathing apparatus). Perform fire extinguishing work as much as possible from windward. Move containers promptly out of fire zone. If removal is impossible, cool containers with water spray. Remain upwind. Avoid breathing smoke.

6. Accidental Release Measures

Personal Protection	: Appropriate protective equipment must be worn when handling a spill of this material. See SECTION8, Exposure Controls / Personal Protection, for recommendations. If exposed to material during clean-up operations, see SECTION4, First Aid Measures, for actions to follow.
Methods for Cleaning Up	: Keep spectators away. Ventilate the spill area. Floor may be slippery; use care to avoid falling. Contain spills immediately with inert materials (e. g. sand, earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal. Keep spills and cleaning run off out of municipal sewers and open bodies of water. The material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.

Material Safety Data Sheets

7. Handling And Storage

- Handling** : Please perform the handling at a good place of the ventilation.
 Do not breathe vapor.
 Avoid contact with skin, eyes, or clothing.
 Wash thoroughly after handling.
 Do not dismantle a cartridge.
 Stability is lost when the ink cools off.
 Be careful to temperature descents in the winter season.
- Storage** : Safekeeping temperature 10-20 degree C.
 Avoid direct rays of the sun.
 Keep it in the good cool and dark space of the ventilation.
 Keep it away from fire, a heat source.
 Avoid the safekeeping of the long term.
 Please do not let me freeze up.
- Specific Uses** : When you use heat to ink by press machine, Formaldehyde occurs.
 Establish the local exhaust, and please do not inhale steam.

8. Exposure Controls / Personal Protection

Exposure Limit Values

No	Chemical Name		TWA	STEL	Ceiling	Skin	SEN
1	Formaldehyde	OSHA PEL	0.75ppm	2ppm	N.E.	N.E.	N.E.
		ACGIH TLV	N.E.	N.E.	0.3ppm	N.E.	N.E.
2	Ethanol, 2,2',2''-nitrilotris-	OSHA PEL	N.E.	N.E.	N.E.	N.E.	N.E.
		ACGIH TLV	5mg/m ³	N.E.	N.E.	N.E.	N.E.

Exposure Controls

Occupational Exposure Controls

- Engineering Controls** : Use exhaust ventilation to keep airborne concentration below exposure limits. (Of the formaldehyde) Because steam or Mist (at the heat press) occurs, please install a local exhaust or a push-pull type exhaust. When the setting of these facilities is difficult, take a

Material Safety Data Sheets

necessary step to prevent a healthy obstacle of a handler. (ex. total ventilating device, mask)

Personal Protection

Respiratory Protection : An air purifying respirator with organic vapor cartridge or canister may be permissible under certain circumstances where air-borne concentrations are expected to exceed exposure limits.



Hand Protection : Chemical – resistant glove should be worn whenever this material is handled. Glove permeation data does not exist for this material. This following glove(s) should be used for splash protection only: Neoprene Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water.



Eye Protection : Use chemical splash goggles. Eye protection worn must be compatible with respiratory protection system employed.



Skin Protection : Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.



Environmental Exposure Controls

: Not available

9. Physical And Chemical Properties

*製品に該当しない時 : Not Applicable、情報がないとき : Not available

Appearance	- Physical state	: liquid
	- Colour	: colorless transparent
Odour		: sulfur odor
pH		: 8.0-9.9
Boiling Point / Boiling Range		: 100 degree C (water)
Melting Point / Merging Range		: Not Applicable
Flash Point		: Noncombustible
Flammability(solid, gas)		: Noncombustible
Vapour Pressure		: 2.3kPa (water)

Material Safety Data Sheets

Specific Gravity	: 1.0-1.2 (25 degree C)
Solubility	: Not available
Water solubility	: Dilutable
Viscosity	: 4.0-4.9mPa s
Vapour density	: <1 (water)

10. Stability And Reactivity

Conditions To Avoid	: Avoid the safekeeping under the high temperature.
Stability	: Stable by the normal handling.
Materials To Avoid	: Avoid mixture with the acid material.
Hazardous Reactions/ Decomposition Products	: A reducing agent occurs in formaldehyde by thermolysis.

11. Toxicological Information

Acute Toxicity

	Oral	Dermal	Inhalation
Formaldehyde	LD50 800mg/kg(rat) 660mg/kg(mouse)	LD50 270mg/kg(rabbit)	LC50 471ppm(rat, 4H)

Eye Irritation	: Irritating to eyes.
Skin Irritation	: Irritating to skin. EHC 89 (1989) mild to moderate
Sensitization	: Formaldehyde
Repeated Dose Toxicity	: Formaldehyde Oral: NOAEL: 15mg/kg/day (rat, 2years) Inhalation: NOAEL: 0.2ppm (0.24mg/m ³) (monkey, 26weeks) Remark: Respiratory tract, stomach
Mutagenicity	: Not Available
Carcinogenicity	: Formaldehyde ACGIH: A2, EU: 3, EPA: B1, IARC: 1, NTP: R

12. Ecological Information

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

Material Safety Data Sheets

Page 7 of 8

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

Ecotoxicity	: Formaldehyde
	Acute:
	24H EC50: 14.7mg/L (SENEDESUMUSU Growth inhibition Growth rate APHA)
	48H EC50: 5.8mg/L (Daphnia Swimming inhibition)
	96H LC50: 6.7mg/L (SUTORAIPUTOBASU)
	Chronic:
	28days NOEC 15.0mg/L (Rainbow trout Growth Lethal OECDTG215)
Persistence And Degradability	: Formaldehyde - Biodegradable
Bioaccumulative Potential	: Formaldehyde - BCF: 3.2, log Kow: 0.35
Other Adverse Effects	: Not Available

13. Disposal Considerations

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

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

14. Transport Information

Check a thing without a leak in a container.

Perform prevention of collapse of cargo surely.

ADR, RID, IMDG, ICAO/IATA: Not classified

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

15. Regulatory Information

以下の項目は必ず記載する。この他に、TSCA での特別な規定 (5,8,12 条等) や州で規制がある場合は記載する。

OSHA Status	: Formaldehyde is hazardous under 29 CFR 1910. 1200.
TSCA Status	: All components on TSCA INVENTORY.
SARA TitleIII	



Material Safety Data Sheets

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

16. Other Information

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.

Revision history

Version	Date	Content
1.0	Feb 19, 2008	First Issue