

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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Preparation Date: NOV-14-2008

PRODUCT TRADE NAME:

**Film Opaque Pen
Correction Pen For Lithographic Films**

Product Use:

2. COMPOSITION / INFORMATION ON INGREDIENTS:

Chemical Name	% by Wt Range	CAS Number	EXPOSURE LIMITS 8 hr. TWA (PPM)	
			OSHA PEL	ACGIH TLV
Propylene glycol monomethyl ether	30-40	107-98-2	100 ppm	100 ppm
Ethanol	20-30	64-17-5	1000 ppm	1000 ppm

3. HAZARDS IDENTIFICATION:

EMERGENCY OVERVIEW

"Ink" in pen is a black liquid with faint odor of alcohol. **FLAMMABLE** liquid and vapor. May produce acrid smoke or fumes in fire conditions. Wear equipment to protect eyes, skin and respiratory tract. Dike or absorb spills to keep material and run-off from entering sewer or waterways. Use water spray to cool containers and disperse vapors. The vapor mixes well with air, explosive mixtures are easily formed. Chemical dangers: Reacts slowly with calcium hypochlorite, silver oxide and ammonia, causing fire and explosion hazard. May cause eye digestive, and respiratory tract irritation. Ingestion may cause central nervous system effects, cardiopulmonary effects and kidney effects. Symptoms include: Convulsions, acidosis, coma, irregular heart beat, heat and kidney failure. This product has caused adverse birth and reproductive effects. Target Organs: Central nervous system, kidneys, heart, respiratory systems. Special handling & work place: Avoid contact with skin & eyes. Do not eat, drink or smoke at work place. Wash hands thoroughly with soap and water. Remove contaminated clothing immediately. Ventilation in work area should be sufficient. Do not take internally.

HMS HAZARD CLASS

HEALTH	(Blue)	2
FLAMMABILITY	(Red)	3
REACTIVITY	(Yellow)	0
PROTECTIVE EQUIPMENT		C

HAZARD INDEX:

0=Minimal Hazard 1=Slight Hazard

C: Safety gloves, goggles and apron.

2=Moderate Hazard 3=Serious Hazard

4=Severe Hazard

POTENTIAL HEALTH EFFECTS

EYES: Exposure may cause eye irritation, redness, pain, and burning.

SKIN CONTACT: Exposure may cause skin irritation. Symptoms may include redness, burning, drying and cracking, skin burns, and skin damage.

INGESTION: May cause nausea and vomiting. Toxicity effects may include paralysis of eye muscles, convulsions, rapid heart beat, kidney abnormalities, and possible cardiac failure. This material can enter the lungs during swallowing or vomiting and cause lung inflammation and/or damage.

INHALATION: May cause respiratory tract irritation. Heated or misted substance may cause headache, irregular eye movements, and possible coma.

CHRONIC (CANCER) INFORMATION: May have the potential for causing reproductive damage in human.

ACUTE EFFECTS: Ethanol in this product may irritates the eyes. Inhalation of high concentration of vapor may cause irritation of the eyes and respiratory tract. May cause effects on the central nervous system.

OTHER HEALTH HAZARDS: Long-term or repeated exposure may dry the skin. Ethanol in this product may have effects on the upper respiratory tract and central nervous system, resulting in irritation, headache, fatigue and lack of concentration. Chronic ingestion of ethanol may cause liver cirrhosis. International misuse by deliberately concentrating & inhaling this product may be harmful or fatal.

4. FIRST AID MEASURES:

EYES: First rinse with plenty of water for at least 15 minutes (remove contact lenses if easily possible), then get medical help.

SKIN: Remove contaminated clothes. Rinse and then wash skin with water and soap. Get medical help if irritation develops and persists.

INGESTION: Rinse mouth. Refer for medical attention.

INHALATION: Remove to fresh air and rest.

NOTE TO PHYSICIAN: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES:

FLASH POINT: 33°C, TCC.

LOWER EXPLOSIVE LIMITS: 3.3% (Ethanol) **UPPER EXPLOSIVE LIMITS:** 19% (Ethanol)

EXTINGUISHING MEDIA: Use powder, alcohol-resistant foam, water in large amounts, carbon dioxide.

FIRE FIGHTING INSTRUCTIONS: Firemen should wear a self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment.

FIRE & EXPLOSION HAZARDS: This product is combustible and may be ignited by heat or flame.

6. ACCIDENTAL RELEASE MEASURES:

*****Large Spills***** Eliminate potential sources of ignition. Wear appropriate respirator and other protective clothing. Shut off source of leak only if it is safe to do so. Prevent from entering drains, sewer, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump or vacuum transfer spilled product to a non-leaking containers and seal tightly for proper disposal. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal.

Film Opaque Pen

7. HANDLING AND STORAGE: Wash hands thoroughly after handling. Avoid contact with skin. Avoid contact with eyes. Avoid breathing mist, dust, vapors or fumes. Harmful if swallowed. Keep caps closed when not in use. Store in cool, dry, well-ventilated area away from sources of ignition and incompatible materials listed in Section 10. **OR INDUSTRIAL USE ONLY.** "KEEP OUT OF REACH OF CHILDREN".

8. EXPOSURE CONTROLS, PERSONAL PROTECTION:

Engineering controls: Local exhaust ventilation may be necessary to keep airborne concentrations below the permissible exposure limits-SEE SECTION 2. Use explosion-proof ventilation as required to control vapor concentrations.

PERSONAL PROTECTIVE EQUIPMENT (PPE): Safety gloves, goggles and apron. Be sure that eyewash is at work area.

RESPIRATORY PROTECTION: Avoid prolonged or repeated breathing of vapors. If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH-Approved respirator to prevent overexposure. In accord with 29 CFR 1910.134. Use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.

EYE PROTECTION: Use safety glasses or goggles as appropriate (29 CFR 1910.133).

SKIN: Wear solvent resistant gloves.

OTHER CLOTHING AND EQUIPMENT: It is suggested that a source of clean water be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance: "Ink" in pen is a black liquid. **Odor:** Faint odor of alcohol. **Boiling Point:** approx. 78°C **Vapor Density:** N/D

Solubility in Water: Partially miscible **Specific Gravity:** N/D **Melting Point:** N/D **Vapor Pressure:** N/D

10. STABILITY AND REACTIVITY:

STABILITY: Stable at room temperature and hazardous polymerization will not occur if product is used and stored as directed.

CONDITIONS TO AVOID: High heat, ignition sources, open flame.

HAZARDOUS POLYMERIZATION: Has not been reported.

INCOMPATIBILITY WITH OTHER MATERIALS: Strong acids, oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide, and various hydrocarbons.

11. TOXICOLOGICAL INFORMATION:

LD50: Not available.

Acute Overexposure: Irritating to skin and eyes by contact. Hydrofluoric acid causes severe, slow-healing burns and may be absorbed through skin. Irritating to respiratory tract if inhaled. May cause headache, dizziness and narcosis. Irritating to gastrointestinal tract if ingested. May cause vomiting, diarrhea and abdominal cramps.

Chronic Overexposure: May cause liver and kidney damage. Hydrofluoric acid is an experimental teratogen. Intentional concentration and inhalation of vapors may cause respiratory stimulation followed by collapse. May cause anemia and leucopenia.

12. ECOLOGICAL INFORMATION: N/D.

13. DISPOSAL CONSIDERATIONS: Dispose in a manner consistent with federal, state, and local regulations. Refer to latest EPA or State Regulations regarding proper disposal.

14. TRANSPORT INFORMATION: Not DOT regulated. Product is labeled in accordance with U.S. 49CFR.

15. REGULATORY INFORMATION: Follow all regulations in your country.

Canadian WHMIS classification (for this product): Class B2 flammable liquid and Class D1/A and Class E.0.

16. OTHER INFORMATION: All information appearing herein is based upon Data obtained from Manufacturer and/or recognized technical sources. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the material are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use, disposal of the material. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for his own particular use. To the best of our knowledge, the information contained herein is accurate. However, neither Nikken Chemical Laboratory Co., Ltd., nor any of its distributors assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.