

*** MATERIAL SAFETY DATA SHEET ***
DYNE PENS 36-48 (N001-010)
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SECTION A

DISTRIBUTOR: UV PROCESS SUPPLY
ADDRESS: 1229 W. CORTLAND
CHICAGO, IL 60614-4805
TELEPHONE #: (773) 248-0099

EMERGENCY#: (800) 424-9300

CHEMICAL CLASS: AMIDE/GLYCOL ETHERS
FORMULA: $\text{HCONH}_2 + \text{C}_2\text{H}_5\text{OC}_2\text{H}_4\text{OH}$
MFR. NAME: FELT TIP DYNE MARKERS
TRADE NAME : DYNE PENS 36-48

SECTION A

INGREDIENTS

Consistent	CAS No.	TLV	OSHA PEL
Ethyl Cellesolve ©*	110-08-05	200 ppm	29CFR 1910.1000
Formamide (F)	72-12-7	20 ppm	
Victoria Blue Dye	2185-86-6	n/a	

*ethyl Cellosolve is a registered trademark of Union Carbide Corporation for 2-thoxyethanol (ethylene glycol monoethyl ether).

Percent volume by dyne level

Level	%C	%F
35	65.0	35.0
36	57.5	42.5
38	46.0	54.0
40	36,5	63.5
42	28.5	71.5
44	22.0	78.0
48	13.0	87.0

Victoria blue dye at 3 grams per liter (0.30% w/v)

SECTION B

HAZARD SPECIFICATIONS (under 290 CFR 1910.1000)

These hazards are associated with the fluids contained in these markers:

Reproductive Toxin	
Eye Hazard	Sensitizer
Combustible Liquid	Skin Hazard
Kidney Toxin	Toxic Agent
Skin Irritant	TLV-20 to 200 ppm PEL-5 ppm (8 hr wtd avg)

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SECTION C

PHYSICAL DATA

Boiling Point: 135oC to 210oC (at 760 mm Hg)
Specific Gravity: 0.93 to 1.13 at 20oC (H₂O = 1.0)
Vapor Density: 3.1 at 20oC (Air = 1)
Percent Volatiles: 100% (by volume)
Freezing Point: - 90oC to + 20oC
Vapor Pressure: 0.08 - 3.75 mm Hg at 20oC
Solubility in Water: Complete % by wt. at 20oC
Appearance and odor: Blue solution with mild, non-residual odor.

SECTION D

FIRE AND EXPLOSION DATA

Flash Point: 108oF to 245oF, per ASTM D56; tag closed cup
Autoignition Temperature: N/A
Flammability Units in Air: 1.7% to 15.6% (by vol. at 200oF):
Extinguishing Media: Water fog recommended; CO₂ dry chemical, and universal foam media, as applied by manufacturer's recommendations, can also be used.
Unusual Fine/Explosion Hazards: Can react with oxidizing material.

SECTION E

HEALTH HAZARDS

Inhalation: Vapors are irritating to eyes, nose, and respiratory tract. May cause headache, nausea, vomiting, weakness.
Skin Contact: May cause irritation.
Ingestion: See inhalation; can also cause breathing difficulty. kidney damage may result from ingestion of large quantities of test solution.
Skin absorption: Prolonged or widespread contact with skin may lead to absorption of harmful amounts of material resulting in symptoms as described under ingestion.
Eye Contact: Causes marked irritation.

SPECIAL WARNING: Pregnant women should not use this product; laboratory studies of animal subjects have shown birth defects, delayed fetal development, and increase fetal mortality at air concentrations of 150 to 220 ppm.

SECTION F

EMERGENCY AND FIRST AID

Eyes: Flush liberally with running water. Call a physician.
Skin: Immediately remove contaminated clothing. Thoroughly wash affected area with soap and water.
Inhalation: Remove to fresh air. If breathing is difficult, give oxygen and call physician.
Ingestion: Give large quantities of water. Induce vomiting. Call a physician.

SECTION G

REACTIVITY

Decomposes partially at temperature above 180oC. Do not combine with concentrated alkali at elevated temperatures.
Hazardous combustion of decomposition products: CO, NH

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SECTION H SPILLS OR LEAKS

Absorb spill with paper toweling or vermiculite. Once absorbed, evaporate outdoors or incinerate in a chemical burner equipped with an after-burner and scrubber.
Dispose of waste product by high temperature incineration, as approved under appropriate federal, state, and local legislation. Do not discharge without prior written approval from health and pollution authorities.

SECTION I SPECIAL PRECAUTIONS

NOT FOR USE AS A CONSUMER PRODUCT. FOR INDUSTRIAL USE ONLY.

Keep this product away from heat and flame. Always use with adequate ventilation. Do not allow fluid to contact skin.

WARNING TO PREGNANT WOMEN: Do not use these markers unless exposure is extremely low. Even small amounts, if repeatedly inhaled, ingested, or absorbed through skin, may cause fetal malformations.

SECTION J TRANSPORTATION

GGVSea/IMDG-Code: 3.2

UN-No:1181

ICAO/IATA-DGR: 3

GGVE/GGVS:3/5b

RID/ADR: 3/5b

ADNR:

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