



Material Safety Data Sheet

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1. PRODUCT IDENTIFICATION

Product Name: Dye Sublimation Ink

Product Type: Dye

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS-No.	Percent
Diethylene Glycol	111-46-6	1%–10%
Polyethylene Glycol	25322-68-3	20%–30%
Surfactant	Not Hazardous/Trade Secret	>1%
Resin	Not Hazardous/Trade Secret	10%–25%
Dye	Not Hazardous/Trade Secret	10%–25%
Deionized Water	7332-18-5	40–50%
Additive	Not Hazardous/Trade Secret	>1%

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye: May cause mild eye irritation.

Skin: May cause mild skin irritation. May be absorbed through the skin.

Ingestion: May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea.

Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Human fatalities have been reported from acute poisoning.

Inhalation: May cause respiratory tract irritation. May be harmful if inhaled.

Inhalation of heated or misted form may cause pulmonary edema.

4. FIRST AID MEASURES

First Aid

INHALATION

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

SKIN CONTACT

Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

EYE CONTACT

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

INGESTION

If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

5. FIRE FIGHTING MEASURES

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool.

Extinguishing Media:

Water or foam may cause frothing. Alcohol foam, water fog, carbon dioxide, dry chemical.

6. ACCIDENTAL RELEASE MEASURES

Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

7. HANDLING AND STORAGE

Handling Wash thoroughly after handling. Use with adequate ventilation. Avoid breathing vapors from heated material. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Wash clothing before reuse. Avoid breathing spray or mist.

Storage

Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed. Store protected from moisture.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Good general ventilation should be sufficient to control airborne levels.

EYE/FACE PROTECTION

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

RESPIRATORS

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace

PROTECTIVE CLOTHING

Wear appropriate protective clothing to minimize contact with skin.

9. PHYSICAL AND CHEMICAL PROPERTIES

1	Color	Cyan, Magenta, Yellow, Black, Light Cyan, Light Magenta
2	Odor	slight odor
3	Boiling point/boiling range of ink	not below 100 °C

4	Solidification temperature of ink	approx. -10 °C
5	Flash point of ink	not below 100 °C
6	Ignition temperature of ink	not below 220 °C
7	Viscosity of ink (cp)	4.0 ± 1.0
8	pH value of ink	7.5 to 9.5
9	Surface Tension of ink (dyne/cm)	35 ± 5.0
10	Density of ink	1.10 ± 0.05
11	Solid content (%)	10~20

The Physical and chemical data given in Section 9 are typical values for this product and are not intended to be product specifications.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Excess heat, exposure to moist air or water.

Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, strong bases.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

CAS# 111-46-6: Draize test, rabbit, eye: 50 mg Mild; Draize test, rabbit, skin: 500 mg Mild; Oral, mouse: LD50 = 23700 mg/kg; Oral, mouse: LD50 = 2300 mg/kg; Oral, rabbit: LD50 = 4400 mg/kg; Oral, rat: LD50 = 12565 mg/kg; Oral, rat: LD50 = 12000 mg/kg; Skin, rabbit: LD50 = 11890 mg/kg.

CAS# 56-81-5: Draize test, rabbit, eye: 126 mg Mild; Draize test, rabbit, eye: 500 mg/24H Mild; Draize test, rabbit, skin: 500 mg/24H Mild; Inhalation, rat: LC50 = >570 mg/m³/1H; Oral, mouse: LD50 = 4090 mg/kg; Oral, rabbit: LD50 = 27 gm/kg; Oral, rat: LD50 = 12600 mg/kg; Skin, rabbit: LD50 = >10 gm/kg.

The information shown in SECTION 3, Hazards identification, is based on toxicity profiles of similar materials or on the components present in this material.

12. ECOLOGICAL INFORMATION

CAS# 111-46-6: Fish: Fathead Minnow: EC/LC50: 26.8 mg/l; 96 Hr.; Static Condition
Water flea Daphnia: EC/LC50: 26.8 mg/l; 96 Hr.; Static Condition
Bacteria: Phytobacterium phosphoreum: EC/LC50: 26.8 mg/l; 15 minutes; Microtox test

13. DISPOSAL CONSIDERATIONS

Waste Disposal

Products which are considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local waste regulator for advice.

14. TRANSPORT INFORMATION

US DOT Hazard Class: NONREGULATED

15. OTHER INFORMATION

Label Hazard Warning:

WARNING! COMBUSTIBLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY AFFECT KIDNEYS AND CENTRAL NERVOUS SYSTEM.

Label Precautions:

Keep away from heat and flame.
Avoid breathing mist.
Avoid contact with eyes, skin and clothing.
Keep container closed.
Use only with adequate ventilation.
Washing thoroughly after handling.

Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases

call a physician.

Product Use:

Laboratory Reagent.

Revision Information:

No Changes.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.