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MATERIAL SAFETY DATA SHEET

NAME: LIQUID PAPER PEN AND INK CORRECTION FLUID
CAS NO: NA **Effective Date:** 8/22/90 **Rev:** 4

A IDENTIFICATION

Composition*	%	Formula: Mixture
1,1,1-Trichloroethane (71-55-6) Titanium Dioxide (13463-67-7) Resins, Dispersants, Colorants Mustard Oil (57-06-7)		Molecular Weight: NA Synonyms: Pen and Ink

B PHYSICAL DATA

Boiling Point	Melting Point	Freezing Point
165 °F 74 °C	NA °F NA °C	NA °F NA °C
Specific Gravity (H_2O=1) 1.32 @ 25/25°C	**Vapor Density (air=1)** ~4.5	**Vapor Pressure @** 68 °F, 100 mmHg
Evaporation (Ether =1) Slower	**Saturation in Air** (by volume @ °F) NA %	**Autoignition Temperature** °F °C NA
% Volatiles (by volume) ~50	**Solubility in Water** <1%	**pH** NA

Appearance/Odor: White fluid with a pungent solvent odor

Flash Point and Test Method(s): None (Closed Cup) Product is non-flammable.

Flammable Limits in Air (% by volume): (See Section H) Lower NA % Upper NA %

C REACTIVITY

Stability		Conditions to Avoid	Polymerization		Conditions to Avoid
stable	X	Contact with open flame or other high temperature sources.	may occur		NA
unstable			will not occur	X	

Incompatible Materials: For solvent: strong alkalis/oxidizers; aluminum, zinc and other reactive metals (e.g. potassium, sodium, magnesium.)

Hazardous Decomposition Products: Thermal degradation, e.g. open flame, can produce small amounts of phosgene, hydrogen chloride and chlorine.

*IF MULTIPLE INGREDIENTS INCLUDE CAS NUMBERS FOR EACH NA NOT AVAILABLE

Footnotes:

Physical data, except for % Volatiles, refers to 1,1,1-Trichloroethane.

D. - HEALTH HAZARD DATA

Occupational Exposure Limits (PEL'S, TLV'S, etc.)

8 Hour TWA's: 1,1,1-Trichloroethane - 350 ppm (OSHA/ACGIH)
Titanium Dioxide - 10 mg/cu m (OSHA/ACGIH)
These levels are not anticipated under foreseeable use conditions.

Warning Signals

NA

Routes/Effects of Exposure

1. Inhalation No adverse effects anticipated from normal use. If vapors are deliberately concentrated and inhaled (abuse), the following symptoms may occur: respiratory irritation, dizziness, drowsiness, headache, nausea, unconsciousness, cardiac sensitization (abnormal heartbeat), coma and death. (Mustard oil is added to the product as an abuse deterrent.)
2. Ingestion

No adverse effects anticipated from normal use. Depending on amount ingested, most of the symptoms described above may occur. Estimated LD_{50} in rats is greater than 5 ml/kg or between 1 pint and 1 quart in humans (ref. Gosselin, Smith and Hodge, Clinical Toxicology of Commercial Products, 5th ed., 1984).

3. Skin

a. Contact

No adverse effects anticipated from normal use. Irritation may occur if contact is prolonged/repeated.

b. Absorption

No adverse effects anticipated from normal use. Solvent can be absorbed through skin (prolonged contact), but not likely in acutely toxic amounts. Estimated LD_{50} in rabbits is greater than 5 ml/kg.

4. Eye Contact

Irritation

5. Other

NA

E. - ENVIRONMENTAL IMPACT

1. **Applicable Regulations**

NA

2. DOT Hazard Class –
3. DOT Shipping Name –

Environmental Effects

NA

F EXPOSURE CONTROL METHODS

Engineering Controls

None under normal use conditions.

Eye Protection

None under normal use conditions.

Skin Protection

None under normal use conditions.

Respiratory Protection

None under normal use conditions.

Other

Product is non-hazardous when used as directed in an office/room with normal air circulation.

G WORK PRACTICES

Handling and Storage

No unusual handling or storage when used as directed. When stored in large quantities (as in warehouse), it should be in a well-ventilated, cool area.

Normal Clean Up

Pick up spills with towels, tissues, etc.

Waste Disposal Methods

Dispose in accordance with applicable federal, state and local laws.

H. EMERGENCY PROCEDURES

Steps to be taken if material is released to the environment or spilled in the work area

Not applicable

Fire and Explosion Hazard	Extinguishing Media
Concentrated vapor of 1,1,1-Trichloroethane can burn, producing hazardous decomposition products (Sec. C).	As for adjacent fire. Dry chemical, foam, carbon dioxide, water fog.

Firefighting Procedures

In fires involving large quantities of product, use self-contained breathing apparatus.

I. FIRST AID AND MEDICAL EMERGENCY PROCEDURES

Eyes

Flush with plenty of water. If irritation persists, obtain medical attention.

Skin

Wash with soap and water.

Inhalation

No adverse effects anticipated from normal use. In an abuse situation, remove from source of exposure. Treat symptomatically. Oxygen may be administered. Seek medical attention immediately and refer to "Notes to Physician" below.

Ingestion

Consult physician.

Notes to Physician

Do not use sympathomimetic agents (e.g. epinephrine) in halogenated hydrocarbon poisoning because of possible induction of ventricular fibrillation.