

MATERIAL SAFETY DATA SHEET
InkSource
Ink
16-2550
1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : 16-2550

Material uses : Industrial applications: Ink for use in a continuous ink jet process.

Emergency phone : Medical: CALL RMPDC, USA (303) 623-5716
Transporters: CALL CHEMTREC, USA (800)-424-9300

Manufacturer : Marconi Data Systems Inc., 1500 Mittel Boulevard, Wood Dale, IL, 60191-1073 U.S.A
Phone: 1-800-843-3610 Fax: 1-800-582-1343
Marconi Data Systems Europe BV., Strijkviertel 39, 3454 PJ De Meern, The Netherlands.
Phone: 31-030-6693000 Fax: 31-030-6693060

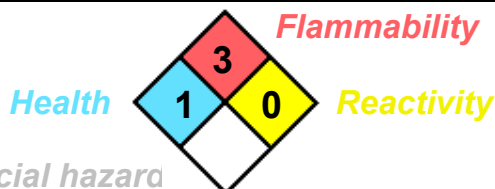
2. COMPOSITION / INFORMATION ON INGREDIENTS
Information on hazardous ingredients

	<u>CAS No.</u>	<u>Percent (%)</u>	<u>Chemical name</u>
1)	13463-67-7	3 - 7	Titanium dioxide
2)	78-93-3	80 - 90	2-Butanone

* Occupational Exposure Limit(s), if available, are listed in section 8

3. HAZARDS IDENTIFICATION

National Fire Protection Association (U.S.A.) :



Emergency Overview : WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL. Keep away from flame, heat, and static discharge sources. Irritant and central nervous system depressant: Avoid inhalation of vapors and contact with eyes and skin. May be harmful if swallowed. If inhaled remove to fresh air. If splashed in eyes flush with water. If contacts skin flush with water and wash with mild soap. In medical emergency call Poison Control Center (USA 303-623-5716) and a physician. Read MSDS before using.

Effects and symptoms

<u>Chemical name</u>	<u>Effects and symptoms</u>
1) Titanium dioxide	Dust may cause mechanical irritation. Inhalation not likely under normal use conditions. Slightly irritating to the skin. Slightly irritating to the eyes.
2) 2-Butanone	Irritating to eyes and respiratory system. Defatting to the skin. Harmful by inhalation, in contact with skin and if swallowed. Can cause dizziness, lightheadedness, headache, nausea, and blurred vision. Can cause CNS depression.

4. FIRST AID MEASURES

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Ingestion : Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Skin contact : Wash with soap and water. Get medical attention if irritation develops.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention.

Continued on Next Page

5. FIRE-FIGHTING MEASURES

- Extinguishing media** : Flammable liquid, insoluble in water.
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
- Special fire-fighting procedures** : Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
- Hazardous thermal decomposition products** : These products are carbon oxides (CO, CO₂). Some metallic oxides.
- Protection of fire-fighters** : Be sure to use an approved/certified respirator or equivalent.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
- Environmental precautions and clean-up methods** : Flammable liquid, insoluble in water.
Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

7. HANDLING AND STORAGE

- Handling** : Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. If ingested, seek medical advice immediately and show the container or the label.
- Storage** : Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).
- Packaging materials** : Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls** : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
- Hygiene measures** : Wash hands after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Occupational Exposure Limits

<u>Chemical name</u>	<u>Exposure limits</u>
1) Titanium dioxide	1) United States ACGIH TWA 8 hours 10 mg/m ³ 2) United States OSHA TWA 8 hours 5 mg/m ³ 3) United States OSHA TWA 8 hours 15 mg/m ³
2) 2-Butanone	1) United States ACGIH STEL 15 minutes 300 ppm 2) United States ACGIH TWA 8 hours 200 ppm 3) United States OSHA TWA 8 hours 200 ppm

Personal Protective Equipment

- Respiratory system** : Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
- Skin and body** : Lab coat.
- Hands** : Impervious gloves.
- Eyes** : Splash goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state and appearance** : Liquid.
- Color** : White.
- Odor threshold** : The highest known value is 10 ppm. Weighted average: 10 ppm.
- Boiling point** : The lowest known value is 80 °C. Weighted average: 80 °C.
- Melting point** : May start to solidify at -87 °C. Weighted average: -87 °C.
- Specific gravity** : 0.92 (Water = 1)
- Vapor density** : 2.5 (Air = 1)

Vapor pressure	: The highest known value is 71 mmHg at 20°C. Weighted average: 71 mmHg at 20°C.
Evaporation rate (butyl acetate = 1)	: The highest known value is 7.1. Weighted average: 7.1.
Solubility	: Easily soluble in methanol, diethyl ether, n-octanol, acetone. Insoluble in cold water, hot water.
Octanol/water partition coefficient	: The product is much more soluble in oil.
pH	: Not applicable.
Flash point	: -6 °C.
Autoignition temperature	: The lowest known value is 515 °C. Weighted average: 515 °C.
Flammable limits	: The lowest known value is 2.0%. The highest known value is 10.0%.
Volatility (w/w)	: 85 %.
VOC Volatility (w/w) - less exempt volatile.	: 85 %.

10. STABILITY AND REACTIVITY

Stability	: The product is stable.
Conditions and materials to avoid	: Not available.
Hazardous reactions	: Slightly reactive to reactive with oxidizing agents, reducing agents, metals, acids, alkalis.
Hazardous decomposition products	: These products are carbon oxides (CO, CO ₂). Some metallic oxides.

11. TOXICOLOGICAL INFORMATION

Chemical name	Toxicological Information
1) Titanium dioxide	Not available.
2) 2-Butanone	1) LD50 Oral Rat: 2737 mg/kg 2) LD50 Oral Mouse: 2190 mg/kg 3) LD50 Oral Mouse: 4050 mg/kg 4) LD50 Dermal Rabbit: 6480 mg/kg 5) LC50 Inhalation vapor Rat: 23500 mg/m ³ 8 hours 6) LCLo Inhalation vapor Female. Rat Fetotoxicity and developmental abnormalities (homeostasis) in rats.: 1000 ppm 1 hours

12. ECOLOGICAL INFORMATION

Persistence/degradability	: Not available.
Ecotoxicity	: Not available.
California, VOC Content	: 782 grams volatile organic / liter less water or exempt volatile.

13. DISPOSAL CONSIDERATIONS

Disposal methods	: Waste must be disposed of in accordance with federal, state and local environmental control regulations.
RCRA waste code	: Not available.

14. TRANSPORT INFORMATION

UN number	: UN1210
Proper shipping name	: Printing Ink
TDG classification	: 3
Packing group	: II

15. REGULATORY INFORMATION

CERCLA	: The following product(s) is (are) listed by CERCLA: 2-Butanone (80 - 90%)
SARA 313	: The following product(s) is (are) listed on SARA 313: 2-Butanone (80 - 90%)
California prop. 65	: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: None.

16. OTHER INFORMATION

Date of issue : September 17, 2001
Prepared by : Garth Studebaker, CSP
Version : 2.12

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.