



Material Safety Data Sheet

Jetbest Corporation

MSDS No.: 090822 SPT 12PL
First issue: 2009/08/22
Revise: -
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1. PRODUCT IDENTIFICATION

Product Name: SEIKO SPT 12PL Inks

Product Type: Pigment

2. HAZARDS IDENTIFICATION

■ Emergency Overview

This ink meets the criteria as "Irritating to eyes and skin" according to EU Directive 1999/45/EC. Ink may flash, when under high temperature. Avoid contact with eyes or clothing. In the case of skin contact, wash with soap and water. Keep out of reach of children.

Potential Health Effects

Inhalation: Harmful by inhalation. Irritating to respiratory system.

Eye Contact: Irritating to eyes.

Skin Contact: Harmful in contact with skin. Irritating to skin.

Ingestion: Harmful: may cause lung damage if swallowed.

Carcinogens: One of the ingredients, carbon black, is classified by IARC as a 2B carcinogen, possibly carcinogenic to humans; none of the other ingredients of this product is listed by NTP, OSHA, or IARC as a carcinogen. The yellow pigment is a nickel compound that is listed by NTP and IARC as a carcinogen; none of the other ingredients in this ink is listed by OSHA, NTP or IARC as a carcinogen.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredients | CAS-No. | Percent |
|-------------|---------|---------|
|-------------|---------|---------|

| | | |
|---|--------------|----------|
| Resin | Trade Secret | 3%–8% |
| Pigment | Trade Secret | 1%–5% |
| 1-Methyl-2-pyrrolidinone | 872-50-4 | ≤ 2% |
| Dipropylene Glycol Monomethyl Ether | 34590-94-8 | 10%–20% |
| 2-Ethoxy Ethyl Ether | 112-36-7 | 20%–40% |
| Tetraethylene Glycol Dimethyl Ether | 143-24-8 | 5%–15% |
| Ethyl Acetoacetate | 141-97-9 | 10%–30% |
| N-Butyl Acetate | 123-86-4 | 1%–5% |
| Ethylene Glycol Monobutyl Ether Acetate (in pigment dispersion) | 112-07-2 | 10%–20% |
| Surfactant | Trade Secret | 0.1–1.0% |

4. FIRST AID MEASURES

First Aid

Inhalation: If inhaled, immediately remove to fresh air and keep warm and calm. If breathing irregularly or not breathing, give artificial respiration. Keep from swallowing vomit. Consult a doctor immediately. If inhaled and feeling sick, remove to fresh air, keep warm and calm and consult a doctor.

Eye Contact: Flush eyes with plenty of water for at least 15 minutes. Consult a doctor immediately.

Skin Contact: Immediately remove from skin with cloth. Flush thoroughly with plenty of water and soap or skin detergent. Do not use solvent or thinner. Consult a doctor in case of change of appearance or ache.

Ingestion: If swallowed, keep calm and consult a doctor immediately. Keep from swallowing vomit.

Protection To First-Aiders : Wear a tool for appropriate protection.

5. FIRE FIGHTING MEASURES

Hazardous gases/vapors produced in fire are carbon monoxide, carbon dioxide, oxides of nitrogen. Extinguishing Water spray, Media CO₂, Dry Chemical or Alcohol foam.

Fire Fighting Instructions

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal protections: Remove the person of the leeward. Keep away the person

from periphery of the place of the leakage. Ventilate sufficiently during clean-up in case of inside of a house.

Environmental Precautions: Do not flush into surface water or sanitary sewer system.

Method for cleaning up: If a spill occurs, use sponges to wipe-up ink, then rinse area with damp cloth. Place waste in closed container for disposal. Do not disposal of waste to the sewer. Wash hands with soap and water.

7. HANDLING AND STORAGE

Handling: Use proper ventilation and no fire in work place. Put protection wear that has electrical conductivity in case of work. Keep out of reach of children and do not drink ink.

Storage:

Store in a cool, dry place.

Avoid freezing or extended storage in high temperatures.

Avoid exposure to moisture.

Specific use(s): No information.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure controls:

| Components | | ACGIH: TWA |
|---|----------------------|--------------------|
| Ethylene Glycol Monobutyl Ether Acetate | | 20 ppm |
| Components | ACGIH: TLV | OSHA: PEL |
| Nickel compounds | 0.2mg/m ³ | 1mg/m ³ |

Engineering Controls

Use only with adequate ventilation.

Personal Protective Equipment

EYE/FACE PROTECTION

Wear safety glasses, or where splash potential exist wear chemical splash goggles.

RESPIRATORS

Where the potential exists for airborne exposure, wear NIOSH approved respiratory protection.

PROTECTIVE CLOTHING

Where there is potential for skin contact, have available and wear as appropriate impervious gloves, apron or smock.

Environmental exposure control

Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|----|------------------------------------|---|
| 1 | Compatible plotter | SEIKO SPT 12PL Printhead |
| 2 | Color | Cyan, Magenta, Yellow, Black, Light Cyan, Light Magenta |
| 3 | Odor | Fruity odor |
| 4 | Boiling point/boiling range of ink | approx. 180 °C or higher |
| 5 | Melting Point/Melting Range | No data available |
| 6 | Flash point of ink | approx. 75 °C |
| 7 | Auto-Ignition Temperature | not below 170 °C |
| 8 | Flammability(solid, gas) | Not Applicable |
| 9 | Explosive Properties | Flammable point: 2.2% to 33.0% |
| 10 | Vapour Pressure | No data available |
| 11 | Specific Gravity | 0.980~0.990 (27 °C) |
| 12 | Solubility | No data available |
| 13 | Water solubility | No data available |
| 14 | Viscosity | 10~12 cps |
| 15 | pH | Not applicable |
| 16 | Oxidizing properties | No data available |
| 17 | Vapor Density | Not Applicable |

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

Stability: Stable at normal temperatures

Conditions to avoid: High and freezing temperatures

Materials to avoid: Oxidizers and explosives

Decomposition

Thermal decomposition may produce carbon dioxide, carbon monoxide.

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| 11. TOXICOLOGICAL INFORMATION |
|--------------------------------------|

Routes of Overexposure: Eye, skin, inhalation, and oral ingestion

Acute Health Hazards: Overexposure of the eye surface to ink may be mildly irritating. Overexposure of ink contact with the skin may cause irritation and in some people, swelling and redness. Intentional inhalation to ink vapors may result in respiratory tract irritation. Intentional or accidental oral ingestion may cause an upset stomach.

Chronic Health Hazards: No information available

Mutagenicity: No information available

Carcinogenicity:

This product contains Ni-compound (Yellow pigment). But this Ni-compound is not listed on the IARC carcinogenicity substances lists. Also, this Ni-compound shows the negative result on AMES test.

N-Methyl pyrrolidone

Toxic influence and carcinogenic were not accepted as a result of inhalation (rat) 0 mg/L (0 ppm), 0.04 mg/L (10 ppm), 0.4 mg/L (99 ppm), 6.0 hr/day, 5 day/week, and the exposure test for two years.

Toxicity Data:

N-Methyl pyrrolidone :

LD50/LC50: Draize test, rabbit, eye: 100 mg Moderate; Oral, mouse: LD50 = 5130 mg/kg; Oral, rat: LD50 = 3914 mg/kg; Skin, rabbit: LD50 = 8 gm/kg.

Dipropylene Glycol Monomethyl Ether:

LD50/LC50: Oral, rat: LD50 = 5130 mg/kg; Dermal, rabbit: LD50 = 9500 mg/kg

2-Ethoxy Ethyl Ether:

LD50/LC50: Draize test, rabbit, eye: 50 mg Moderate; Oral, rat: LD50 = 4970 mg/kg; Skin, rabbit: LD50 = 6700 uL/kg.

Tetraethylene Glycol Dimethyl Ether:

LD50/LC50: Draize test, rabbit, eye: 500 mg Mild; Oral, rat: LD50 = 5140 mg/kg.

Ethyl Acetoacetate

Draize test, rabbit, eye: 100 mg Severe; Draize test, rabbit, eye: 100 mg/24H Moderate; Oral, mouse: LD50 = 5105 mg/kg; Oral, rat: LD50 = 3980 mg/kg.

N-Butyl Acetate

LD50/LC50: Draize test, rabbit, eye: 100 mg Moderate; Draize test, rabbit, skin: 500 mg/24H Moderate; Inhalation, mouse: LC50 = 6 gm/m³/2H; Inhalation, rat: LC50 = 390 ppm/4H; Oral, mouse: LD50 = 6 gm/kg; Oral, rabbit: LD50 = 3200 mg/kg; Oral, rat: LD50 = 10768 mg/kg; Skin, rabbit: LD50 = >17600 mg/kg.

Ethylene Glycol Monobutyl Ether Acetate:

LD50/LC50: Draize test, rabbit, eye: 500 mg/24H Mild; Oral, mouse: LD50 = 3200 mg/kg; Oral, rat: LD50 = 2400 mg/kg; Skin, rabbit: LD50 = 1500 mg/kg.

Inhalation:

1-Methyl-2-pyrrolidone:

LC50/inhalation/4h/rat > 5100 ppm

Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Irritating:

Ethylene Glycol Monobutyl Ether Acetate:

Eye irritating : 500mg/24hrs (Rabbit OECD405) mild irritating.

Skin irritating : 500mg/24hrs (open@ Rabbit OECD404) mild irritating.

1-Methyl-2-pyrrolidone:

Eye irritating (Rabbit OECD405): mild irritating.

Skin irritating (open @Rabbit OECD404): mild irritating.

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

Ecotoxicity:

N-Methyl pyrrolidone

Bluegill LC₅₀: 832 mg/L (22 °C), bull trout LC₅₀: 3048 mg/L (22 °C)

Ethyl Acetoacetate

Fish: Bluegill/Sunfish: LC50: 300-310 mg/l; 96h; .Daphnia: Daphnia: LC50: 230 mg/l; 96h; .Bacteria: Phytobacterium phosphoreum: EC50: 320 ppm; 96h; Microtox testLog Pow: 1.2. Other: Readily biodegradable.

Mobility: No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available

Other Adverse Effects: Disclosure of ink and abandonment have a possibility of affecting environment. Then, cautions are required for handling. It is necessary to cope

with it so that especially a product or washing water may not flow to the ground, a river, and a drain.

13. DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14. TRANSPORT INFORMATION

General: Not a regulated article under United States DOT, IATA, ADR, IMDG, or RID

IATA

Proper shipping name: Not applicable

Hazard class: Not applicable

Packaging exceptions: None

Identification number: None
(UN)

Packing group: N/A

15. Regulatory Considerations

US Regulation:

TSCA Section 4(a) Final Test Rules Regulated: Not Regulated

TSCA Section 8(a) Preliminary Assessment Information Rule (PAIR): Not Regulated

TSCA Section 8(b) Inventory Update Rule: All components on TSCA INVENTORY

TSCA Section 8(d) Health and Safety Study Reporting: Not Regulated

TSCA Section 12(b) One-Time Export Notification Regulated:
1-Methyl-2-pyrrolidone

California Proposition 65: 1-Methyl-2-pyrrolidone

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

SARA TITLE III:

Section 313:**Toxic Chemical: De minimis concentration**

| | |
|---|------------|
| Diethylene Glycol Diethyl Ether | 1.0 % N230 |
| Ethylene Glycol Monobutyl Ether Acetate | 1.0 % N230 |
| 1-Methyl-2-pyrrolidone | 1.0 % |

Label element according to the Global Harmonized System (GHS).

Pictogram or symbol



Warning

R20/21: Harmful by inhalation and in contact with skin.

R36/38: Irritating to eyes and skin.

S24/25: Avoid contact with skin and eyes

S41: In case of fire and/or explosion do not breathe fumes.

16. OTHER INFORMATION

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.