

Any Copic Marker
or Various Ink

Material Safety Data Sheet

Too Marker Products Inc.
Ebisu Subaru Bldg. 4F., 20-8, Ebisu 1-chome, Shibuya-ku, Tokyo, Japan
(Phone)03-3440-6141 (Fax)03-3440-6151
July 21, 2000
Contact: Toshiniko Yokoyama

Product Name:	Copic - Copic Sketch - Various Ink	
Hazardous Component:	Ethanol	77.4(Wt%)
	Isopropanol	4.4(Wt%)
	n-Propanol	8.7(Wt%)
	Ester of Maleic Resin	7.0(Wt%)
	Octylphenoxypolyethoxyethanol Nonionic Surfactant	1.3(Wt%)
	Ionol CP	0.6(Wt%)
	dyes	0.6(Wt%)
	Total:	100.0(Wt%)

This artist drawing and marker ink is a professional artist's product that is not intended for use by children. Keep out of the reach of children.
Flammable. Eye Irritant. Avoid inhalation. Vapor may be harmful.

Physical and Chemical Characteristics

Classification:	Inflammable liquid
Boiling Point:	Not known
Vapor Pressure:	Not known
Vapor Density:	Not known
Solubility in Water:	Moderate
Specific Gravity:	0.79
Melting Point:	Not Applicable
Evaporation Rate:	Rapid
Odor:	Alcohol-Like
Appearance:	Various COPIC Colors - Liquid Inks

Fire and Explosion Hazard Data

Flash Point:	60°F(15.5°C)
Lower Flammable Limit:	Not known
Upper Flammable Limit:	Not known
Fire extinguishing media:	Powder, carbonic acid gas, or alcoholm.
Special Fire Fighting Procedure:	Use powder, carbonic acid gas, or alcoholm can be used for initial stage. Report to the appropriate authorities to seek for assistance. Prohibit unauthorized persons to enter the area the fire broke out. If the fire started out from the peripheral area, sprinkle water on surrounding facilities to cool off. If the container is movable, transfer it to a safe place promptly.

Unusual Fire & Explosion Hazards: None

Reactivity Data

Stability:	Stable: Yes
Conditions to Avoid:	Avoid storage in areas of excessive heat.
Incompatibility (Avoid):	None Known
Hazardous Decomposition:	No
Hazardous Polymerization:	No
Conditions to Avoid:	None Known

Health Hazard Data

Physical Hazards: Due to the nature of inflammable liquid, it is prone to form explosive compound with oxygen.

Health Hazards:	When absorbs steam, it functions as an anesthetic, and causes such symptoms as mucous membrane irritation, dizziness, numbness, and headache after repeated exposure.
	The user should judge both the accuracy and the suitability of this information for any intention or purpose. No other warranty is given.
First Aid:	<p>Eye Contact: Flush the eye with fresh water for at least 15 minutes. Seek ophthalmologist assistance immediately.</p> <p>Skin Contact: Removed the contaminated clothes immediately. Wash the affected area with large quantities of water and soap.</p> <p>Inhaled: Transport the victim in fresh air, keep the victim repose and warm, and seek medical help immediately. If the victim is not breathing give mouth-to-mouth resuscitation, in case of difficult breathing administer oxygen inhalations.</p> <p>Swallowed: Give a plenty of water or salt water, put fingers down the throat to induce vomit, and seek medical help immediately. Do not give an unconscious victim anything orally.</p>

Precaution for Safe Handling and Use

In Case of Spill:	<p>Due to the osmotic and volatile nature, remove any possible sources of ignition immediately. For small amount, use suitable absorbent such as sand, sawdust, wess and exercise caution in collection, or immediately flush it out by large quantities of water.</p> <p>For large amount, block the flow by materials such as sand; lead it to a safe place to collect it into seal container as much as possible. Flush out the remaining portion of the spill by large quantities of water. In this case, need to make sure that the concentrated liquid would not be flown out into nearby rivers and other water bodies. Dispose in accordance with State and Federal regulations for flammable liquid.</p>
Waste Disposal Method	Dispose in accordance with State and Federal regulations for flammable liquid.
Precaution	Use with adequate ventilation. Avoid exposure to fire and flame.
Other Precautions	None Known.

Control Measures

Respiratory Protection:	Not usually required but NIOSH approved respirator may be used.
Local Exhaust:	Yes
Special Local Exhaust:	Not usually required except in spray applications.
Mechanical Exhaust:	Local or room exhaust suggested.
Other Mech. Exhaust:	Not specifically suggested.
Protective Gloves:	Yes to avoid skin contact.
Eye Protection:	Chemical goggles or face shield to avoid splash.
Other Protective Clothing or Equipment:	Artist's impervious apron, rubber gloves, safety shoes, gas mask (application dependent)
Work/Hygienic Practices:	<p>Keep markers and ink containers closed when not in use.</p> <p>Use standard Artist's precautions. Do not spray or airbrush without adequate ventilation. Avoid inhalation of mist or spray.</p>
Handling and Storage:	<p>Handling: Do not place it close by or pour it over open flame or sources of ignition to evaporate the liquid unnecessarily. Do not heat the liquid. Always keep the handling site tidy, and do not leave any inflammable or oxygenic materials.</p> <p>Storage: Store in accordance with State and Federal regulation, where well-ventilated to avoid steam build-ups. Keep away from any sources of ignition or other dangerous locations; watch the temperature and humidity, and store it in a cool, dry area out of direct sunlight. It is strictly prohibited to store with the hazardous materials under the State and Federal regulation.</p>

Precaution for Safe Handling and Use**In Case of Spill:**

If it is possible to perform measures against leakage without accompanying danger, tighten the valve of container, or cover the leaking part of container to stop leakage. If the leakage of product from its container does not stop, transfer the container to an open space with no danger and dispense the product there.

If a large amount of product leaks, evacuate people from the surrounding place of the product, ban the people from entering the place by means of tightening a rope around the neighboring area of leakage taking place, etc. If necessary, wear inhalation equipment.

Waste Disposal Method

Dispose in accordance with State and Federal regulations for High Pressure Gas.

Precaution of transportation

Dispose in accordance with State and Federal regulations for High Pressure Gas. When this product is transported by vehicles, etc., it is desirable to issue warning paper on transportation to the transporter. Upon confirmation that there is no leakage of product from the can and the damage of can, loads the product so that it is not effected by shock, tumbling down, falling or other damages, never fail to take preventive measures against the collapse of the loaded product, and shut the direct sunlight from the product during transporting. When filling up the product to tanker, etc., and unloading the product, make the tanker stop at flat place, apply a brake as well as a car stoppage, and then perform filling up and unloading practice.

Control Measures**Handling and Storage:**

Handling: Handle the product in accordance with the high pressure gas control law. Wear appropriate protective gears and handle the product from windward as far as possible so as not to inhale the product or to have the product splashed in the eye and stuck on the skin and cloth.

Try to keep working environment under less than allowable concentration of the product by means of controlling the emission of product in gaseous form (refer to "Exposure prevention measure" paragraph and adequate ventilation.

Open and shut the valve of a filling can quietly.

When heating the filling can, use warmed wet cloth or warmed water of less than 40 degrees C (104 degrees F). Never heat the can directly by the use of heater. Never forget to tighten the valve of a wasted can with leaving some pressure in the wasted can in order to prevent air and moisture from entering the can.

Storage: Store in accordance with State and Federal regulation.

Keep the filling can away from the direct sunlight and store in the place with low temperature and good ventilation.

Store the filling can in dry place and prevent it from erosion caused by moisture and water droplets, etc. Always keep the filling can under the temperature of less than 40 degrees C (104 degrees F).

Provide the container of product the measure to prevent valve's damage by the shock caused by turning upside down of the container and so on. Keep the product away from spark, heat, flame, etc.

Exposure prevention measure**Control concentration:**

Not stipulated

Measure by facilities:

When the product is used at an indoor workshop, seal up the generating source of product, or install local ventilation equipment.

In the near places where the product is handled, install safety shower, toilet, eye-washing equipment, etc., and at the same time, put up signs indicating clearly the places where those facilities are installed.

Protective gears:

Wear inhalation protection gears, protection glasses, protection gloves, protection suits, etc., as required.

Information of environmental effect

Solubility: According to the solubility test based on the 301D Closed Bottle Law of guideline of OECD chemical products test, no biogenerativity was recognized.

Accumlativity: According to the coefficiency to distribution(octanol/water) POW measurement based on the 107 Guideline of OECD chemical products test, no accumulativity was recognized at 1.06.

Toxicity fish: No data available

Coefficient to global warming: 0.25(However, comparative evaluation on the basis that CFC-11 equals 1.0)

<Material Safety Data Sheet>

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Ebisu Subaru Bldg. 4F., 20-8, Ebisu 1-chome, Shibuya-ku, Tokyo, Japan
(Phone)03-3440-6141 (Fax)03-3440-6151
January 01, 2010

Product Name: Copic Drawing Pens in Black (water based dye ink)

Component: Mixed product of followings:
Water 7732-18-5
Dye (Black) 6428-31-5
Glycerin 56-81-5
Urea 57-13-6
Diethylene Glycol 111-46-6

Non-Flammable.

Physical and Chemical Characteristics
Classification: Liquid
Boiling Point: 105 degrees C (220 degrees F)
Vapor Pressure: Not known
Vapor Density: Not known
Solubility in Water: Soluble
Specific Gravity: 1.1
Melting Point: Not Applicable
Evaporation Rate: Not known
Odor: Very little
Appearance: Liquid Ink

Fire and Explosion Hazard Data
Flash Point: Non-flammable
Lower Flammable Limit:
Upper Flammable Limit:
Fire extinguishing media: Fogged Water, Bubble, carbonic acid gas, Dry chemicals
Special Fire Fighting Procedure: Block out fire source and extinguish with extinguishing media

Unusual Fire & Explosion Hazard: None

Reactivity Data
Stability: Stable in normal condition
Conditions to Avoid: Not known
Incompatibility (Avoid): Not known
Hazardous Decomposition: No
Hazardous Polymerization: No
Conditions to Avoid: Not known

Health Hazard Data
Physical Hazards: No
Health Hazards: Do not swallow. No warranty is given.
Avoid direct contact with eyes causing irritation.
First Aid: **Eye Contact:** Flush the eye with fresh water and seek ophthalmologist assistance immediately in the event of pain.
Swallowed: Put fingers down the throat to induce vomit, and seek medical help immediately.
Inhaled: Move the victim to the place with fresh air.
Skin Contact: Wash with large quantities of water and soap.

Precaution for Safe Handling and Use
In Case of Spill: When working, the protective equipment should be worn without fail.
Do not work in leeward.
In case of a little amount: The leakage liquid is absorbed by sawdust, the cotton waste, and sand, etc. and collected.
In case of a large amount: Stop the outflow with earth and sand etc. and collect it as much as possible.
Waste Disposal Method: Dispose in accordance with the regulations of country concerned for water based pigment ink.
Precaution: None Known.
Other Precautions: None Known.

Control Measures
Respiratory Protection: None.
Local Exhaust: Not specifically suggested.
Special Local Exhaust: Not specifically suggested.
Mechanical Exhaust: Not specifically suggested.
Other Mech. Exhaust: Not specifically suggested.
Protective Gloves: Yes to avoid skin contact.
Eye Protection: Wear protective spectacles
Other Protective Clothing or Equipment: Mask and rubber shoes, etc.
Work/Hygienic Practices: Do not spray or airbrush without adequate ventilation.
Avoid inhalation of mist or spray.
Handling and Storage: **Handling:** Do not touch eyes with hands stained with ink.
Storage: Store in accordance with the regulations of country concerned.
Keep in the place with good ventilation.
Keep it away from children.

Protection from Exposure: **Accommodation/equipment measures:** Handle the material in a well-ventilated place.
Protective gear: Rubber gloves and chemical goggles or face shield for normal condition. Wear rubber gloves, rubber apron, and safety shoes, protective goggles, and gas mask for concentrated area.

Disposal: Recover free liquid and dispose in accordance with the regulations of country concerned.

Transportation: Follow the directions given in Handling and Storage section.
Confirm no container leakage and make sure to prevent the loading collapse of cargo piles by falls and damage in transportation.

Inquiry, References: The above statements were based on currently available data and information. Please note that this does not ensure the product characteristics in every possible respect. Strict observance of current laws and regulations is individual responsibility.

<Material Safety Data Sheet>

Too Marker Products Inc.
Ebisu Subaru Bldg. 4F., 20-8, Ebisu 1-chome, Shibuya-ku, Tokyo, Japan
(Phone)03-3440-6141 (Fax)03-3440-6151
January 01, 2010

Product Name: Copic Drawing Pen in Sepia (water based dye ink)

Component: Mixed product of followings:
Water 7732-18-5
Dye (Sepia) C.I No.30145
Glycerin 56-81-5
Urea 57-13-6

Non-Flammable.

Physical and Chemical Characteristics

Classification: Liquid
Boiling Point: 100 degrees C (212 degrees F)
Vapor Pressure: Not known
Vapor Density: Not known
Solubility in Water: Soluble
Specific Gravity: 1.1
Melting Point: Not Applicable
Evaporation Rate: Not known
Odor: Very little
Appearance: Liquid Ink

Fire and Explosion Hazard Data

Flash Point: Non-flammable
Lower Flammable Limit:
Upper Flammable Limit:
Fire extinguishing media: Fogged Water, Bubble, carbonic acid gas, Dry chemicals
Special Fire Fighting Procedure: Block out fire source and extinguish with extinguishing media

Unusual Fire & Explosion Hazard: None

Reactivity Data

Stability: Stable in normal condition
Conditions to Avoid: Not known
Incompatibility (Avoid): Not known
Hazardous Decomposition: No
Hazardous Polymerization: No
Conditions to Avoid: Not known

Health Hazard Data

Physical Hazards: No
Health Hazards: Do not swallow. No warranty is given.
Avoid direct contact with eyes causing irritation.
First Aid: **Eye Contact:** Flush the eye with fresh water and seek ophthalmologist assistance immediately in the event of pain.
Swallowed: Put fingers down the throat to induce vomit, and seek medical help immediately.
Inhaled: Move the victim to the place with fresh air.
Skin Contact: Wash with large quantities of water and soap.

Precaution for Safe Handling and Use

In Case of Spill: When working, the protective equipment should be worn without fail.
Do not work in leeward.
In case of a little amount: The leakage liquid is absorbed by sawdust, the cotton waste, and sand, etc. and collected.
In case of a large amount: Stop the outflow with earth and sand etc. and collect it as much as possible.
Waste Disposal Method: Dispose in accordance with the regulations of country concerned for water based pigment ink.
Precaution: None Known.
Other Precautions: None Known.

Control Measures

Respiratory Protection: None.
Local Exhaust: Not specifically suggested.
Special Local Exhaust: Not specifically suggested.
Mechanical Exhaust: Not specifically suggested.
Other Mech. Exhaust: Not specifically suggested.
Protective Gloves: Yes to avoid skin contact.
Eye Protection: Wear protective spectacles
Other Protective Clothing or Equipment: Mask and rubber shoes, etc.
Work/Hygienic Practices: Do not spray or airbrush without adequate ventilation.
Avoid inhalation of mist or spray.
Handling and Storage: **Handling:** Do not touch eyes with hands stained with ink.
Storage: Store in accordance with the regulations of country concerned.
Keep in the place with good ventilation.
Keep it away from children.

Protection from Exposure: **Accommodation/equipment measures:** Handle the material in a well-ventilated place.
Protective gear: Rubber gloves and chemical goggles or face shield for normal condition. Wear rubber gloves, rubber apron, and safety shoes, protective goggles, and gas mask for concentrated area.

Disposal: Recover free liquid and dispose in accordance with the regulations of country concerned.

Transportation: Follow the directions given in Handling and Storage section.
Confirm no container leakage and make sure to prevent the loading collapse of cargo piles by falls and damage in transportation.

Inquiry, References: The above statements were based on currently available data and information. Please note that this does not ensure the product characteristics in every possible respect. Strict observance of current laws and regulations is individual responsibility.

Multiliner/SP

Material Safety Data Sheet

Too Marker Products Inc.
 Ebisu Subaru Bldg. 4F., 20-8, Ebisu 1-chome, Shibuya-ku, Tokyo, Japan
 (Phone)03-3440-6141 (Fax)03-3440-6151
 April 01, 2006
 Contact: Toshihiko Yokoyama

Product Name: Copic Multiliner SP (water based pigment ink)

Hazardous Component:	Carbon Black	20.0(Wt%)
	Ethrene Glycol	20.0(Wt%)
	Diethrene Glycol	7.0(Wt%)
	Isopropyl Alcohol	1.0(Wt%)
	Resin	2.0(Wt%)
	Urea	2.0(Wt%)
	Others	0.1(Wt%)
	Water	47.9(Wt%)
	Total:	100.0(Wt%)

This artist drawing and marker ink is a professional artists's product that is not intended for use by children. Keep out of the reach of children.
 Non-Flammable.

Physical and Chemical Characteristics

Classification:	Non-flammable liquid
Boiling Point:	100 degrees centigrade
Vapor Pressure:	Not known
Vapor Density:	Not known
Solubility in Water:	Moderate
Specific Gravity:	1.03-1.05
Melting Point:	Not Applicable
Evaporation Rate:	Slow
Odor:	Very little
Appearance:	Liquid Ink

Fire and Explosion Hazard Data

Flash Point:	Non-flammable
Lower Flammable Limit:	
Upper Flammable Limit:	
Fire extinguishing media:	Water
Special Fire Fighting Procedure:	Use water. Report to the appropriate authorities to seek for assistance.
Unusual Fire & Explosion Haz	None

Reactivity Data

Stability:	Stable: Yes
Conditions to Avoid:	None Known
Incompatibility (Avoid):	None Known
Hazardous Decomposition:	No
Hazardous Polymerization:	No
Conditions to Avoid:	None Known

Health Hazard Data

Physical Hazards: No
Health Hazards: Do not swallow. No warranty is given.

First Aid: **Eye Contact:** Flush the eye with fresh water for at least 5 minutes. Seek ophthalmologist assistance immediately.
Swallowed: Give a plenty of water or salt water, put fingers down the throat to induce vomit, and seek medical help immediately. Do not give an unconscious victim anything orally.

Precaution for Safe Handling and Use

In Case of Spill: Flush out the spill by large quantities of water. In this case, need to make sure that the concentrated liquid would not be flown out into nearby rivers and other water bodies.
Waste Disposal Method: Dispose in accordance with the regulations of country concerned for water based pigment ink.
Precaution: None Known.
Other Precautions: None Known.

Control Measures

Respiratory Protection: None.
Local Exhaust: Not specifically suggested.
Special Local Exhaust: Not specifically suggested.
Mechanical Exhaust: Not specifically suggested.
Other Mech. Exhaust: Not specifically suggested.
Protective Gloves: Yes to avoid skin contact.
Eye Protection: Chemical goggles or face shield to avoid splash.
Other Protective Clothing or Equipment: Impervious rubber gloves
Work/Hygienic Practices: Use standard Artist's precautions. Do not spray or airbrush without adequate ventilation. Avoid inhalation of mist or spray.
Handling and Storage: **Handling:** Do not swallow.
Storage: Store in accordance with the regulations of country concerned. Store it in a cool and dry area out of direct sunlight.

Protection from Exposure: **Accommodation/equipment measures:** Handle the material in a well-ventilated place.
Protective gear: Rubber gloves and chemical goggles or face shield for normal condition. Wear rubber gloves, rubber apron, and safety shoes, protective goggles, and gas mask for concentrated area.

Disposal: Recover free liquid and dispose in accordance with the regulations of country concerned.

Transportation: Follow the directions given in Handling and Storage section.

Inquiry, References: The above statements were based on currently available data and information. Please note that this does not ensure the product characteristics in every possible respect. Strict observance of current laws and regulations is individual responsibility.



MGSL

Page 1 of 1
Test No. 060401846
August 18, 2006

Test Report

To: Too Marker Products Inc.

Ebisu Subaru Bldg. 4F., 20-8, Ebisu 1-chome,
Shibuya-ku, Tokyo, Japan 150-0013

Japan Recreation and Miscellaneous Goods Safety Laboratory
Registered inspection laboratory under Food Sanitation Law of
the Ministry of Health, Labour and Welfare

Tokyo Office

4-22-4, Higashikomagata, Sumida-ku, Tokyo 130-8611
TEL 81-3-3829-2515 FAX 81-3-3829-2549

We hereby inform you about the test results of the sample commissioned to us on August 7, 2006.

Sample	COPIC Ink CP-1
Test items	Test of heavy metals, European Standard
Date of test	August 17, 2006

1. Test method

European Standard related to safety of toys (EN 71 Part 3: 1995)

Applied instrument : ICP (Inductively Coupled Plasma) Atomic Emission Spectroscopy

2. Test results

Unit: mg/kg

Item	Limit	Result
Migrated antimony	Equal to or less than 60	Equal to or less than 5
Migrated arsenic	Equal to or less than 25	Equal to or less than 2
Migrated barium	Equal to or less than 1000	Equal to or less than 100
Migrated cadmium	Equal to or less than 75	Equal to or less than 5
Migrated chromium	Equal to or less than 60	Equal to or less than 5
Migrated lead	Equal to or less than 90	Equal to or less than 5
Migrated mercury	Equal to or less than 60	Equal to or less than 5
Migrated selenium	Equal to or less than 500	Equal to or less than 50

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Approved by
Tsunehisa Shinohara,
Director

Tsunehisa Shinohara

Tested by
Hironori Sonobe,
Inspector

Hironori Sonobe

- * The contents of this report shall not be placed on advertisement or elsewhere without prior approval of our Chairman.
- * This test report shall not be reproduced partially for use.
- * This test report refers only to the test of the provided sample(s).

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Ebisu Subaru Bldg. 4F., 20-8, Ebisu 1-chome, Shibuya-ku, Tokyo, Japan
(Phone)03-3440-6141 (Fax)03-3440-6151
January 01, 2010

Product Name:	atyouSpica pen (water based pigment ink)	
Component:	Mixed product of followings: Glass flakes coated with Silver Borosilicate Glass 65997-17-3 Silver 7440-22-4 Oxidation Tin 18282-10-5 Ethylene Glycol 107-21-1 Isopropylene Glycol 67-63-0 Diethylene glycol monobutyl ether 112-34-5 Diethylene Glycol 111-46-6 Urea 57-13-6 Antifungal Agent 26172-55-4 Glycerin 56-81-5 Activator 25086-15-1 Water 7732-18-5 Pigment: Black 1333-86-4 Blue 147-14-8 Red 57301-22-1 Yellow 5567-15-7 Orange 6505-28-8 Pink 1047-16-1 Violet 6358-30-1 Green 1328-53-6	
Physical and Chemical Characteristics		
Classification:	Liquid	
Boiling Point:	Not known	
Vapor Pressure:	Not known	
Vapor Density:	Not known	
Solubility in Water:	Soluble Glass flakes coated with Titanium are non-soluble	
Specific Gravity:	Not known	
Melting Point:	Not Applicable	
Evaporation Rate:	Not known	
Odor:	Very little	
Appearance:	Liquid Ink	
Fire and Explosion Hazard Data		
Flash Point:	Non-flammable	
Lower Flammable Limit:		
Upper Flammable Limit:		
Fire extinguishing media:	Powder, carbonic acid gas, or sands	
Special Fire Fighting Procedure:	Block out fire source and extinguish with extinguishing media	
Unusual Fire & Explosion Hazards:	None	
Reactivity Data		
Stability:	Stable in normal condition	
Conditions to Avoid:	Not known	
Incompatibility (Avoid):	Not known	
Hazardous Decomposition:	No	
Hazardous Polymerization:	No	
Conditions to Avoid:	Not known	

<Material Safety Data Sheet>

Too Marker Products Inc.
Ebisu Subaru Bldg. 4F., 20-8, Ebisu 1-chome, Shibuya-ku, Tokyo, Japan
(Phone)03-3440-6141 (Fax)03-3440-6151
January 01, 2010

Product Name:	atyouSpica pen (water based pigment ink)	
Component:	Mixed product of followings: Glass flakes coated with Silver Borosilicate Glass 65997-17-3 Silver 7440-22-4 Oxidation Tin 18282-10-5 Ethylene Glycol 107-21-1 Isopropylene Glycol 67-63-0 Diethylene glycol monobutyl ether 112-34-5 Diethylene Glycol 111-46-6 Urea 57-13-6 Antifungal Agent 26172-55-4 Glycerin 56-81-5 Activator 25086-15-1 Water 7732-18-5 Pigment: Black 1333-86-4 Blue 147-14-8 Red 57301-22-1 Yellow 5567-15-7 Orange 6505-28-8 Pink 1047-16-1 Violet 6358-30-1 Green 1328-53-6	
Physical and Chemical Characteristics		
Classification:	Liquid	
Boiling Point:	Not known	
Vapor Pressure:	Not known	
Vapor Density:	Not known	
Solubility in Water:	Soluble Glass flakes coated with Titanium are non-soluble	
Specific Gravity:	Not known	
Melting Point:	Not Applicable	
Evaporation Rate:	Not known	
Odor:	Very little	
Appearance:	Liquid Ink	
Fire and Explosion Hazard Data		
Flash Point:	Non-flammable	
Lower Flammable Limit:		
Upper Flammable Limit:		
Fire extinguishing media:	Powder, carbonic acid gas, or sands	
Special Fire Fighting Procedure:	Block out fire source and extinguish with extinguishing media	
Unusual Fire & Explosion Hazards:	None	
Reactivity Data		
Stability:	Stable in normal condition	
Conditions to Avoid:	Not known	
Incompatibility (Avoid):	Not known	
Hazardous Decomposition:	No	
Hazardous Polymerization:	No	
Conditions to Avoid:	Not known	

Material Safety Data Sheet

Manufacturer Product
 Trade Name: Copic Aircan, Sharp, Inc., Chicago, Ill.
 Trade Name: Copic Aircan, Sharp, Inc., Chicago, Ill.
 May 18, 1993

Product Name:	Copic Aircan (HFC-134a, Chlorofluorocarbon<CFC>-134a)	
Identification of substance:	Category of product	Mono substance
	Name of chemical(s)	Tetrafluoromethane
	Molecular count(weight)	102.03
	Content	more than 99.5%
	Chemical formula	CH ₂ FCF ₃
	CAS No.	811-97-2
	TSCA No.	811-97-2
	EINECS No.	212-377-0
	UN Classification No.	Class 2
	UN No.	1078

This artist drawing and marker ink is a professional artist's product that is not intended for use by children. Keep out of the reach of children.

Physical and Chemical Characteristics

Classification:	Inflammable liquid
Boiling Point:	-26.18 degrees C (-15 degrees F)
Vapor Pressure:	0.666Mpa (97 PSI) at 25 degrees C (77 degrees F)
Vapor Density:	3.52
Solubility in Water:	Moderate
Melting Point:	-101 degrees C (-150 degrees F)
Evaporation Rate:	Rapid
Appearance:	Transparent liquid gas

Classification by hazard

Designation of classification:	High pressure gas Inflammable liquid gas
Hazardousness:	The product is unerosive and inflammable liquid gas. There is a possibility that in the case where this product is dispensed into the air as liquid, if the product directly sticks on the skin, frostbite takes place on the skin. Because the product's evaporation accompanies taking its surrounding atmosphere of latent heat. In addition, when the product evaporates, it sells. For this reason, in the case of using the product within a closed room, take enough ventilation of the room because the swelling of the product reduce oxygen concentration in the room which may eventually suffocates a person in the room.
Toxicity:	Toxicity of this product through inhalation in very slight. In the normal use of it, suffocation, anesthesia, liver dysfunction, etc., rarely take place. Inhalation of high concentration of the gas causes a symptom which looks like general anesthesia. Further exposure to the product may cause a person a nausea, an ecstatic feeling (the weakening of thinking faculty), motor nerves' disorder for physically-joint movement, unconsciousness, etc., all of which are generally anesthetic and caused by the tempoal functional weakening of nerve system. And the exposure to the product of high concentration also may invite disorderly heart beating and the suspension of heart beating.

Precaution for Safe Handling and Use**In Case of Spill:**

If it is possible to perform measures against leakage without accompanying danger, tighten the valve of container, or cover the leaking part of container to stop leakage. If the leakage of product from its container does not stop, transfer the container to an open space with no danger and dispense the product there.

If a large amount of product leaks, evacuate people from the surrounding place of the product, ban the people from entering the place by means of tightening a rope around the neighboring area of leakage taking place, etc. If necessary, wear inhalation equipment.

Waste Disposal Method

Dispose in accordance with State and Federal regulations for High Pressure Gas.

Precaution of transportation

Dispose in accordance with State and Federal regulations for High Pressure Gas. When this product is transported by vehicles, etc., it is desirable to issue warning paper on transportation to the transporter. Upon confirmation that there is no leakage of product from the can and the damage of can, loads the product so that it is not effected by shock, tumbling down, falling or other damages, never fail to take preventive measures against the collapse of the loaded product, and shut the direct sunlight from the product during transporting. When filling up the product to tanker, etc., and unloading the product, make the tanker stop at flat place, apply a brake as well as a car stoppage, and then perform filling up and unloading practice.

Control Measures**Handling and Storage:**

Handling: Handle the product in accordance with the high pressure gas control law. Wear appropriate protective gears and handle the product from windward as far as possible so as not to inhale the product or to have the product splashed in the eye and stuck on the skin and cloth.

Try to keep working environment under less than allowable concentration of the product by means of controlling the emission of product in gaseous form (refer to "Exposure prevention measure" paragraph and adequate ventilation.

Open and shut the valve of a filling can quietly.

When heating the filling can, use warmed wet cloth or warmed water of less than 40 degrees C (104 degrees F). Never heat the can directly by the use of heater. Never forget to tighten the valve of a wasted can with leaving some pressure in the wasted can in order to prevent air and moisture from entering the can.

Storage: Store in accordance with State and Federal regulation.

Keep the filling can away from the direct sunlight and store in the place with low temperature and good ventilation.

Store the filling can in dry place and prevent it from erosion caused by moisture and water droplets, etc. Always keep the filling can under the temperature of less than 40 degrees C (104 degrees F).

Provide the container of product the measure to prevent valve's damage by the shock caused by turning upside down of the container and so on. Keep the product away from spark, heat, flame, etc.

Exposure prevention measure**Control concentration:**

Not stipulated

Measure by facilities:

When the product is used at an indoor workshop, seal up the generating source of product, or install local ventilation equipment.

In the near places where the product is handled, install safety shower, toilet, eye-washing equipment, etc., and at the same time, put up signs indicating clearly the places where those facilities are installed.

Protective gears:

Wear inhalation protection gears, protection glasses, protection gloves, protection suits, etc., as required.

Environmental effect:	The product reacts with hydroxyle group and ends up resolving into carbon dioxide and water. Concerning about the effect of this product on ozone layers and global warming (greenhouse effect), please refer to the paragraph related to "Information on environment effect."
Fire extinguishing media:	Since this product is inflammable, choose and use appropriate extinguishing agent around the fire having just occurred.
Special Fire Fighting Procedure:	This product is inflammable and usually does not catch fire. In case of fire in the surrounding area of the product, transfer the container immediately including the product to safer place. If it is impossible to transfer the container, sprinkle water to the container as well as the area surrounding the container in order to cool the container, and prevent the fire from spreading. Be careful not to inhale toxic gas created by biodegradation caused by the fire.

Information of Hazardousness

Ignition point:	None
Flash point:	No data available
Explosive limit:	None
Stability/Reactivity:	If the product is stable and dissolved 0.1% of the product through heating at the temperature of 897 degrees C (1,647 degrees F) and 46% at the temperature of 1,137 degrees C (2,079 degrees F).
Erosiveness:	Aluminium alloy has no toxic effect as long as the magnesium content of the alloy is low.

Information of toxicity

Sensitivity:	Cardiac sensitivity to adrenalin dog NOEL 50,000ppm
Acute toxicity:	Inhalation rat LC50 4 hours>500,000ppm rat ALC 4 hours>467,000ppm
Chronical toxicity:	Inhalation rat 2 years NOEL 10,000ppm
Carcinogenicity:	Inhalation rat 2 years NOEL 10,000ppm
Mutagenicity:	Ames test negative
Genotoxicity:	rabit 40,000ppm, None

Health Hazard Data

First Aid:	<p>Eye contact: Flush with fresh running water immediately for more than 15 minutes, and soon after that, take a medical treatment.</p> <p>Skin Contact: If the product sticks on the skin in gaseous form, it gives the skin no damage. However, if the product in gaseous form touches the moisture on the skin, the skin may take on frostbite. Because of this, divest the person immediately who touches the product of his clothes, shoes and socks. Flush enough with a large amount of water the skin part stuck with the product. If there remains irritation on the skin, take a medical treatment immediately.</p> <p>Inhaled: If a person inhales high concentration of this product, carry him to the place immediately where he can take fresh air in, keep him warm and quiet by the use of blanket, etc., and soon after that, take him to a doctor for medical check. In the case of a breath suspension or the weakening of breathing power, secure enough breathing by means of loosening his clothes, and after that, provide an artificial respiration, or according to circumstances, provide oxygen inhalation, and immediately after that, take him to a doctor for medical treatment.</p> <p>Swallowed: Since the product takes faseous form under ordinarily temperature and pressure, it is unthinkable that a person drinks the product in the normal use of it.</p>
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Information of environmental effect

Solubility:

According to the solubility test based on the 301D Closed Bottle Law of guideline of OECD chemical products test, no biodegradability was recognized.

Accumlativity:

According to the coefficient to distribution(octanol/water) POW measurement based on the 107 Guideline of OECD chemical products test, no accumlativity was recognized at 1.06.

Toxicity fish:

No data available

Coefficient to global warming:

0.25(However, comparative evaluation on the basis that CFC-11 equals 1.0)