

MATERIAL SAFETY DATA SHEET

MSDS #: IC1178-0101

Product Code: 0899A / F45-1301

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: Canon Color BJ Cartridge BC-21e

Product Code: 0899A / F45-1301

Manufacturer: Canon Inc., 30-2, Shimomaruko 3-Chome, Ohta-ku, Tokyo, Phone #03-3758-2111

dwhSupplier: Canon USA, Inc., One Canon Park, Melville, NY 11747, USA

Phone # : 1-800-OK-CANON 24 Hr. Emergency CHEMTREC # 1-800-424-9300

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

< Ingredient(s) >

| Chemical Name / Generic name | CAS # / EC # | Weight % | EU Symbol/ R-Phrase | USA OSHA PEL | ACGIH TLV | EU ILV | DFG MAK |
|---|-------------------------------|-------------|----------------------------|---|--|--|--|
| Glycerin | 56-81-5 / 200-289-5 | 5 - 10 | None / None | (as mist) Total dust TWA = 15 mg/m ³ Respirable fraction TWA = 5 mg/m ³ | (as mist) TWA = 10 mg/m ³ | Not established | Not established |
| Thiodiglycol (Contained in cyan, magenta and yellow ink) | 111-48-8 / 203-874-3 | 5 - 10 | Xi / R36 | Not established | Not established | Not established | Not established |
| Ethylene glycol (Contained only in black ink) | 107-21-1 / 203-473-3 | 2 - 6 | Xn / R22 | Not established | (aerosol) Ceiling = 100 mg/m ³ | TWA = 20 ppm, 52 mg/m ³ STEL = 40 ppm, 104 mg/m ³ | 10 ppm, 26 mg/m ³ |
| Copper compound (Contained only in cyan ink) | Confidential | 2 - 6 | None / None | Not established | Not established | Not established | Copper and its compounds Inhalable fraction 1.0 mg/m ³ |
| Isopropyl alcohol | 67-63-0 / 200-661-7 | 2 - 6 | F / R11 Xi / R36 R67 | TWA = 400 ppm, 980 mg/m ³ | TWA = 400 ppm, 983 mg/m ³ STEL = 500 ppm, 1230 mg/m ³ | Not established | 200 ppm, 500 mg/m ³ |
| C.I. Direct Yellow 173 (Contained only in yellow ink) | Not registered / 414-410-6 | 1 - 3 | Xi / R41 | Not established | Not established | Not established | Not established |
| C.I. Direct Violet 107 - The substance name in accordance with 67/547/EEC is stated in SECTION 16 (Contained only in magenta ink) | Not registered / 413-180-4 | 1 - 3 | Xi / R41 | Not established | Not established | Not established | Not established |
| Poly(oxy-1,2-ethanediy),.alpha., .alpha.'-[1,4-dimethyl-1,4-bis(2-m ethylpropyl)-2-butyn-1,4-diyl]bi s[.omega.-hydroxy- (Contained in cyan , magenta and yellow ink) | 9014-85-1 / Not applicable | 1 - 3 | Xi / R41 | Not established | Not established | Not established | Not established |
| Ammonia derivative | Confidential | 5 - 10 | None / None | Not established | Not established | Not established | Not established |
| Water | 7732-18-5 / 231-79-12 | 60 - 80 | None / None | Not established | Not established | Not established | Not established |

< Carcinogen >

No component of this ink is listed as a human carcinogen or a potential carcinogen in IARC Monographs, NTP, OSHA regulations or Annex I to Directive 67/548/EEC.

SECTION 3 HAZARDS IDENTIFICATION**EU Classification:**

Not classified as dangerous.

Emergency Overview:

A set of four colors ink cartridges. (Black, Cyan, Magenta and Yellow)
All the ink is liquid mixture with slight odor.

Potential Health Effects and Symptoms:**Inhalation:**

No adverse effects are expected under intended use.
Glycerin mist may cause physical irritation and difficulty breathing.
Over exposure to ethylene glycol and/or isopropyl alcohol may cause headache, nausea, dizziness, vomiting, drowsiness, cough and sore throat.

Ingestion:

Ingestion of glycerin, ethylene glycol and/or isopropyl alcohol may cause headache, nausea, dizziness, vomiting, drowsiness, abdominal pain, dullness and sore throat.

Eye:

May cause minimal irritation based on the animal test data of this ink.
(See SECTION 11)

Skin:

May be no irritation and no sensitization based on the animal test data of this ink.
(See SECTION 11)

Chronic Effects:

Not identified

Medical Conditions Generally known to be Aggravated by Exposure:

Not identified

SECTION 4 FIRST AID MEASURES**First Aid Measures:****Inhalation:**

If symptoms are experienced, move victim to fresh air and obtain medical advice.

Ingestion:

Rinse mouth. Give one or two glasses of water.
If irritation or discomfort occurs, obtain medical advice immediately.

Eye:

Immediately flush with water for 5 minutes or until the chemical is removed.
If irritation persists, obtain medical advice immediately.

Skin:

Wash with water and soap or mild detergent.
If irritation persists, obtain medical advice.

Note to Physicians:

None

SECTION 5 FIRE FIGHTING MEASURES**Fire Fighting Measures:****Extinguishing Media:**CO₂, water, foam or dry chemicals**Unsuitable Extinguishing Media:**

None

Special Fire Fighting Procedures:

None

Unusual Fire and Explosion Hazards:

None

Fire and Explosive Properties (See also Section 9):**Hazardous Combustion Products:**CO, CO₂, NO_x and SO_x**Other Properties:**

None

SECTION 6 ACCIDENTAL RELEASE MEASURES**Personal Precautions:**

Avoid contact with skin, eyes and clothing.

Environmental Precautions:

Do not release to sewer, surface water or ground water.

Method for Cleaning Up:

Wipe off with wet cloth or paper.

SECTION 7 HANDLING AND STORAGE**Handling:**

Use with adequate ventilation.

Avoid contact with skin, eyes and clothing.

When contact, wash out immediately.

Storage:

Keep in a cool and dry place. Keep away from heat and flame.

Protect from sunlight.

Keep out of the reach of children.

Specific Uses:

Ink for Ink Jet Printer.

For more information, please refer to the instruction of this product.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**Exposure Guidelines:**

Not established for this ink. (Also refer to SECTION 2)

Engineering Controls:

Use adequate ventilation.

Personal Protection Equipment(s):**Respiratory Protection:** Required
 Not Required**Eye/Face Protection:** Required
 Not Required**Skin Protection:** Required
 Not Required

MATERIAL SAFETY DATA SHEET

MSDS #: IC1178-0101
 Product Code: 0899A / F45-1301

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance: | Black, cyan, magenta and yellow liquid |
| Odor: | Slight odor |
| pH: | 8.2 - 10.5 |
| Boiling Point/Range(°C): | Not available |
| Melting Point/Range(°C): | Not available |
| Decomposition Temperature(°C): | Not available |
| Flash Point(°C): | Black : 49.0 Color : Estimate 55 - 57 (Tag.closed cup. Do not sustain combustion.) |
| Flammable (Explosive) Limits: | Not available |
| Autoignition Temperature(°C): | Black : Not available Color : Estimate 460 - 490 (ASTM-E659) |
| Flammability: | Classified as "Combustible liquid" under OSHA-HCS. Not classified as "flammable" or "combustible" under FHSA. Not classified as "flammable" under 1999/45/EC. |
| Explosive Properties: | None |
| Oxidizing Properties: | None |
| Vapor Pressure : | Not available |
| Vapor Density : | Not available |
| Density / Specific Gravity: | 1.04 - 1.10 |
| Water Solubility : | Miscible |
| Fat Solubility : | Not available |
| Partition Coefficient (n-Octanol/Water): | Not available |
| Percent Volatile (%): | 60 - 80 |
| Evaporation Rate: | Not available |
| Viscosity (mPa s): | 1.5 - 2.6 |

SECTION 10 STABILITY AND REACTIVITY

| | |
|--|--|
| Stability: | <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Unstable |
| Conditions to Avoid: | None |
| Materials to Avoid: | Acids, bases, oxidizing materials and reducing agents |
| Hazardous Decomposition Products: | CO, CO ₂ , NO _x , Ammonia and SO _x |
| Hazardous Polymerization: | <input type="checkbox"/> May Occur <input checked="" type="checkbox"/> Will Not Occur |
| Conditions to Avoid: | None |

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Toxicity:

Inhalation:

Not available

Ingestion:

Not available

Eye:

Black : Minimal irritant, Maximum Group Mean Score = 2.7, Class 3 (rabbit)
 Cyan : Minimal irritant, Maximum Group Mean Score = 5.3, Class 3 (rabbit)
 Magenta : Minimal irritant, Maximum Group Mean Score = 3.3, Class 3 (rabbit)
 OECD Guidelines No.405 (1987) & 92/69/EEC Method B5
 Yellow : Minimal irritant, Maximum Group Mean Score = 4.0 (rabbit)
 EPA (FIFRA) Pesticide Assessment Guideline par.81-4
 EPA (TSCA) Federal Regulation Subpart E Sec.798.4500

Skin:

Black, Cyan and Magenta : Non irritant, Primary Irritation Index = 0.0 (rabbit)
 OECD Guidelines No.404 (1992)
 92/69/EEC Method B4
 Yellow : Non irritant, Primary Irritation Index = 0.0 (rabbit)
 EPA (FIFRA) Pesticide Assessment Guideline par.81-5
 EPA (TSCA) Federal Regulation Subpart E Sec.798.4470

Sensitization:

Black and Magenta : Non sensitizer, Sensitization rate = 0 % (0/10) (guinea pig)
 OECD Guidelines No.406 (1992)
 96/54/EC Method B6
 Cyan and Yellow : Non sensitizer, Sensitization rate = 0 % (0/10) (guinea pig)
 OECD Guidelines No.406 (1992)
 92/69/EEC Method B6

Mutagenicity:

Ames test : Negative (test strains: *S.typhimurium*)

Reproductive Toxicity:

Not available

Carcinogenicity:

Not available

Others:

Not available

SECTION 12 ECOLOGICAL INFORMATION**Mobility:** Not available**Persistence /
Degradability:** Not available**Bioaccumulation:** Not available**Ecotoxicity:** Not available**Other Adverse Effects:** Not available**SECTION 13 DISPOSAL CONSIDERATION****Method of Disposal:**

Disposal may be subject to federal, state and local laws.

SECTION 14 TRANSPORT INFORMATION**UN #:** None**UN Shipping Name:** None**UN Classification:** None**UN Packing Group:** None**Marine Pollutant:** Yes No **Chemical name (wt%):****Special Precautions:** None**SECTION 15 REGULATORY INFORMATION**

< EU Information >

Information on the Label:**Symbol & Indication:** Not required**R-Phrase:**

Not required

S-Phrase:

Not required

Dangerous Component(s):

None

Special Precautions under 1999/45/EC Annex V:

Not required

Specific Provisions in Relation to Protection of Man or the Environment:**76/769/EEC:** Not regulated**(EC)2037/2000:** Not regulated**(EEC)2455/92:** Not regulated**Others:** None

< USA Information >

Information on the Label under FHSA:

Signal Word: Not required

Hazard warning:
Not required

Safety Advice:
Not required

Hazardous Component(s):
None

SARA Title III §313:

| Chemical Name | Weight % |
|--|--------------------|
| "Ethylene glycol" (107-21-1) (Contained only in black ink) | 2 - 6 |
| "Copper Compounds" (Contained only in cyan ink) (as Cu) | 2 - 6 (< 0.35) |

California Proposition 65:

| Chemical Name | Weight % |
|---------------|----------|
| None | |

< Canada Information >

WHMIS Controlled Product: Not applicable (Manufactured article)

< Australia Information >

Statement of Hazardous Nature: Not classified as hazardous according to criteria of NOHSC.

SECTION 16 OTHER INFORMATION

<SECTION 2 Ingredient(s) / Substance name(s)>

"C. I. Direct Violet 107 " :

"A mixture of: sodium 5-[8-[4-[4-[7-(3,5-dicarboxylatophenylazo)-8-hydroxy-3,6-disulfonatonaphthalen-1-ylamino]-6-hydroxy-1,3,5-triazin-2-yl]-2,5-dimethylpiperazin-1-yl]-6-hydroxy-1,3,5-triazin-2-ylamino]-1-hydroxy-3,6-disulfonatonaphthalen-2-ylazo]-isophthalate; ammonium 5-[8-[4-[4-[7-(3,5-dicarboxylatophenylazo)-8-hydroxy-3,6-disulfonatonaphthalen-1-ylamino]-6-hydroxy-1,3,5-triazin-2-yl]-2,5-dimethylpiperazin-1-yl]-6-hydroxy-1,3,5-triazin-2-ylamino]-1-hydroxy-3,6-disulfonatonaphthalen-2-ylazo]-isophthalate; 5-[8-[4-[4-[7-(3,5-dicarboxylatophenylazo)-8-hydroxy-3,6-disulfonatonaphthalen-1-ylamino]-6-hydroxy-1,3,5-triazin-2-yl]-2,5-dimethylpiperazin-1-yl]-6-hydroxy-1,3,5-triazin-2-ylamino]-1-hydroxy-3,6-disulfonaphthalen-2-ylazo]-isophthalic acid"

<R phrase list>

R11 : Highly flammable. R22 : Harmful if swallowed. R36 : Irritating to eyes.
R41 : Risk of serious damage to eyes. R67 : Vapours may cause drowsiness and dizziness.

<Revised information from the previous version>

Entirely revised.

Literature Reference:

- U.S. Department of Labor, 29CFR Part 1910
- U.S. Environmental Protection Agency, 40CFR Part 372
- U.S. Consumer Product Safety Commission, 16CFR Part 1500
- ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices
- U.S. Department of Health and Human Services National Toxicology Program, Annual Report on Carcinogens
- World Health Organization International Agency for Research on Cancer, IARC Monographs on the Evaluation on the Carcinogenic Risk of Chemicals to Humans
- DFG, List of MAK and BAT Values
- EU Directive 76/769/EEC, 67/548/EEC, 1999/45/EC
- EU Regulation (EC)2037/2000, (EEC)2455/92
- Canada Workplace Hazardous Materials Information System
- Australia National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008]

Abbreviations:

EU: European Union.
OSHA PEL: PEL(Permissible Exposure Limit) under Occupational Safety and Health Administration (USA).
ACGIH TLV: TLV(Threshold Limit Value) under American Conference of Governmental Industrial Hygienists.
EU ILV: Indicative Limit Values for Occupational Exposure under EU Directive 91/322/EEC and 2000/39/EC.
DFG MAK: MAK(Maximale Arbeitsplatzkonzentrationen) under Deutsche Forschungsgemeinschaft.
TWA: Time Weighted Average.
IARC: International Agency for Research on Cancer.
NTP: National Toxicology Program (USA).
OSHA HCS: Occupational Safety and Health Act, Hazard Communication Standard (USA).
FHSA: Federal Hazardous Substances Act (USA).
WHMIS: Workplace Hazardous Materials Information System.
NOHSC: National Occupational Health and Safety Commission Act 1985.

The information, data and recommendations set forth herein (the "Information") are presented in good faith and are believed to be correct as of the date hereof. The company/manufacturer makes no representations as to the completeness or accuracy of the Information and disclaims responsibility for any reliance thereon. The Information is provided upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. Any use of the Information must be determined by the user to be in accordance with applicable Federal, state and local laws and regulations. In no event will the company/manufacturer be responsible for damages of any nature whatsoever resulting from the use or reliance upon the Information.
NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE WITH RESPECT TO THE INFORMATION OR THE PRODUCT TO WHICH THE INFORMATION REFERS.