

Product Name: **NCT-8201**

Code:

**This product is classified as Hazardous according to the criteria of Worksafe Australia****1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

*Product Name* BLACK SOLVENT BASED INK

*Product Code* DI-8201

*General Use* Fast drying black ink for use in drop on demand (DOD) inkjet printers. Suitable for non-porous substrates.

*Distributor*

*Business Hours:* 8.30 am – 5.00pm  
Monday to Friday

*Manufacturer*

National Coding Technologies Pty Ltd  
Unit 5c/46 Mileham Street  
Windsor N.S.W. 2756  
PO.Box 5754 South Windsor  
T: (02)4577 3500 F: (02) 45773506  
ABN: 13 115 315 841

*Business Hours:* 8.30 am – 5.00pm  
(US time) Monday to Friday

*Poison Information (24 hours)* 13 11 26

**2. COMPOSITION / INFORMATION ON INGREDIENTS**

<i>Component</i>	<i>CAS Number</i>	<i>EC &amp; Risk Phrases</i>		<i>Composition % w/w</i>	<i>Exposure Limits</i>			
		<i>EC</i>	<i>R</i>		<i>TWA</i>		<i>STEL</i>	
					<i>ppm</i>	<i>mg/m<sup>3</sup></i>	<i>ppm</i>	<i>mg/m<sup>3</sup></i>
2-Butanone	78-93-3	F Xn Xi	R11 – 36/37	60 - 80	150	445	300	890
Ethyl Acetate	141-78-6	F	R11, R36	10 - 40	200	720	---	---
Ethanol	64-17-5	F	R11	5 - 20	1000	1900	---	---
Resins	Proprietary	--	R11	< 10	---	---	---	---
Dystuffs	Proprietary	--	-----	< 10	---	---	---	---
Additives	Proprietary	--	-----	< 1	---	---	---	---

**3. HAZARDOUS INFORMATION**

*POISON SCHEDULE NO* None Assigned

*HAZCHEM CODE* 3[Y]E

*HAZARD SUMMARY* WARNING. FLAMMABLE LIQUID. SKIN, EYE AND MUCOUS MEMBRANE IRRITANT.



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<i>INHALATION</i>	Toxic by inhalation. Inhalation of vapors will cause irritation to mucous membranes and upper respiratory tract. Exposure symptoms can include nausea, dizziness, loss of coordination and impaired judgment, CNS (central nervous system) depression, coughing, breathing difficulties and visual impairment. Extreme or prolonged exposure can lead to unconsciousness, coma and death. The product is non-sensitising to the lungs.
<i>EYE CONTACT</i>	Vapors and liquid will cause moderate irritation in contact with eyes, which will result in stinging, redness and lachrymation. The product is potentially corrosive to eyes.
<i>SKIN CONTACT</i>	May cause irritation in contact with skin. Symptoms can include redness, itching, burning and drying of the skin. The solvent can permeate the skin by absorption. The product is non-corrosive to the skin.
<i>INGESTION</i>	Toxic if swallowed. May cause irritation to the mouth, esophagus, and stomach. Symptoms can include nausea, headaches CNS (Central Nervous System) depression, blindness, coma and death.
<i>CHRONIC</i>	Repeated or prolonged exposure to this material may result in skin irritation leading to possible contact dermatitis. Inhalation may aggravate existing respiratory disorders. Repeated exposure to a highly toxic substance may produce general deterioration of health by an accumulation in one or many human organs.

#### **4. EMERGENCY AND FIRST AID MEASURES**

*Poison Information Centers in each State capital city can provide additional assistance for scheduled poisons*

<i>INHALATION</i>	Remove from the source of contamination or move the victim to fresh air. Ensure airways are clear and have a qualified person give oxygen via a face mask if breathing difficulties exist. If victim has stopped breathing, begin artificial respiration, or if the heart has stopped, cardiopulmonary resuscitation. Seek immediate medical attention!
<i>EYE CONTACT</i>	Check for and remove any contact lenses. If contact with eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye. If irritation develops and persists, seek medical attention.
<i>SKIN CONTACT</i>	Remove all contaminated clothing. Wash gently but thoroughly with water and non-abrasive soap for approximately 15 minutes. Ensure contaminated clothing is washed before re-use or discard. If irritation develops and persists, seek medical attention.
<i>INGESTION</i>	Never give anything by mouth if victim is semi-conscious or unconscious. Do NOT induce vomiting unless directed to do so by qualified medical personnel. Loosen tight clothing, such as collar, tie, belt or waistband. Seek immediate medical attention if symptoms appear!
<i>FIRST AID FACILITIES</i>	Eye wash and normal washroom facilities.
<i>ADVICE TO PHYSICIAN</i>	Treat symptomatically.



## 5. EXPLOSION HAZARD DATA AND FIRE FIGHTING MEASURES

<i>EXPLOSIVE LIMITS</i>	% Lower 2	% Upper 12 (estimated)
<i>FLASH POINT</i>	-5 °C (closed cup)	
<i>AUTO-IGNITION TEMP.</i>	> 390 °C	
<i>SPECIFIC HAZARDS</i>	<b>Flammable Liquid.</b> May form flammable or explosive vapor mixtures at elevated temperatures. Remove all sources of ignition.	
<i>EXTINGUISHING MEDIA</i>	<b>Flammable liquid, soluble in water:</b> SMALL FIRE: use DRY chemical powder LARGE FIRE: use water spray or fog. Water spray may be used to cool down heat-exposed containers to prevent pressure build-up, auto ignition or explosion.	
<i>SPECIAL FIRE FIGHTING PROCEDURES</i>	<b>Flammable Liquid.</b> Fire fighters must wear self-contained breathing apparatus and full protective clothing if at risk of exposure to vapor or products of combustion are likely.	
<i>UNUSUAL FIRE AND EXPLOSION HAZARDS</i>	Closed containers may rupture (due to build up of pressure) when exposed to extreme heat	
<i>HAZCHEM CODE</i>	3[Y]E	
<i>HAZARDOUS DECOMPOSITION PRODUCTS</i>	Thermal decomposition may produce oxides of carbon (CO, CO <sub>2</sub> ) and nitrogen.	

## 6. ACCIDENTAL RELEASE MEASURES

<i>PERSONAL PROTECTION</i>	Remove all sources of ignition. Increase ventilation. Evacuate all necessary personnel. Wear self-contained breathing apparatus. And full protective clothing to minimize skin and eye exposure.
<i>GENERAL</i>	If possible contain the spill. Place inert absorbent such as vermiculite, sand or dirt onto spilled material. Use clean non-sparking tools to collect the material and place into a suitable labeled container. Do not dilute material but contain. Mop up the remaining material and place into the same container. If large quantities of this material enter the water ways, contact the Environmental Protection Authority (EPA), or your local Waste Management Authority.  If necessary, consult an expert on the disposal of recovered material. Ensure disposal is in compliance with government requirements and ensure conformity of local disposal regulation. Please notify appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill.
<i>SPILL</i>	Dike spill. Absorb with inert material and collect for disposal. Flush area with water. Prevent washings from entering waterways.

## 7. HANDLING AND STORAGE

<i>HANDLING - general</i>	Keep material locked away securely. Keep material away from sparks, flames and other ignition sources. Post 'NO SMOKING' signs in the areas of use. Wear appropriate protective equipment to prevent inhalation, skin and eye contact. Ensure a high level of personal hygiene is maintained when using this product i.e., ALWAYS wash hands before eating, drinking, smoking or using the toilet.
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**HANDLING- Printer Maintenance**

Use non-sparking tools. Turn printhead off before cleaning or servicing. Ground Printhead to Service Tray (metal waste pan) when cleaning or performing maintenance which generates waste fluids. Do not line Service Tray with paper toweling or rags. Ground all components used in fluid transfer and storage procedures to limit the risk of static discharge. Plastic cannot be properly grounded. Dispose of all waste fluids promptly in a compatible storage container equipped with a flame arrestor. Refer to and follow printer manual instructions for operation and maintenance.

**STORAGE**

Store in a segregated and approved area. Store in a cool, dry place away from direct sunlight or sources of heat. Avoid all sources of ignition. Avoid contact with incompatible materials such as strong oxidizing agents. Store above 2 °C and below 35 °C Keep containers tightly closed and sealed until ready for use.

**STORAGE REGULATIONS & SPECIAL PRECAUTIONS**

Class 3 Flammable Liquid.

**PACKAGING MATERIALS**

Use original container.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**EXPOSURE LIMITS**

**2-Butanone**

TWA: 200 ppm [ACGIH, United States (US), Japan, Netherlands, Sweden, United Kingdom (UK), Germany, Korea]

STEL: 300 ppm [ACGIH, United Kingdom (UK), Bulgaria, Korea]

TWA: 150 ppm      STEL: 190 ppm [Finland] SKIN

TWA: 50 ppm      [Denmark] SKIN

TWA: 50 ppm      STEL: 100 ppm [Sweden]

**Ethanol**

ACGIH TLV 1000 ppm

OSHA PEL 1000 ppm

COSHH OES 1000 ppm

**Ethyl acetate**

Worksafe Australia TWA 200 ppm 720 mg/m<sup>3</sup>

Worksafe Australia STEL None Assigned

UK Exposure Limit, OES long-term 1400 mg/m<sup>3</sup>

**ENGINEERING CONTROLS (VENTILATION):**

Natural ventilation should be sufficient under normal conditions of use. However, where vapors or mists are generated, the use of a grounded local exhaust ventilation system, drawing vapors or mists away from workers breathing zones, is highly recommended.

**PERSONAL PROTECTION**

Respiratory:

Where ventilation is inadequate and vapors or mists are generated the use of an 'Air Purifying Respirator' with an 'Organic Vapor Filter', meeting requirements of AS/NZS 1715 and AS/NZS 1716, is highly recommended.

Protective Gloves

The use of Butyl Gloves or other impervious gloves are recommended.

Eye Protection

Wear chemical splash goggles or shielded safety glasses. An eyewash station should be readily available

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Protective Clothing	The use of plastic aprons and/or laboratory coats, sleeves, overalls and rubber boots are recommended.
General	For operations where contact can occur, wear clothing to limit skin contact. Always wash hands before smoking, eating drinking or using the toilet. Wash contaminated (non-disposable) clothing and other protective equipment before storing or re-using.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<i>APPEARANCE</i>	Black liquid	<i>VAPOUR PRESSURE</i>	>71 mm Hg, (20 °C)
<i>ODOUR</i>	Characteristic odor	<i>VAPOUR DENSITY</i>	2.4 approx. (Air=1)
<i>BOILING POINT</i>	> 86 °C	<i>EVAPORATION RATE</i>	> 2 (n-Butyl Acetate=1)
<i>MELTING POINT</i>	< -50 °C	<i>PERCENT VOLATILE</i>	No data available
<i>SPECIFIC GRAVITY</i>	0.85 g/L, approximately	<i>VOC:</i>	No data available
<i>pH</i>	Not Applicable	<i>VISCOSITY:</i>	No data available
<i>SOLUBILITY in water</i>	Partially Miscible/dispersible	<i>OCTANOL/WATER partition coefficient</i>	Partially Miscible/dispersible

## 10. STABILITY AND REACTIVITY

<i>STABILITY</i>	Stable under normal conditions of use. Non-reactive with combustible materials, organic materials (except peroxides) and moisture.
<i>HAZARDOUS POLYMERISATION</i>	Will not occur.
<i>CONDITIONS TO AVOID</i>	Excessive heat. Strong oxidizing agents, reducing agents, acids, alkalis and moisture (contamination).
<i>INCOMPATIBILITY</i>	Do not expose to strong alkalis (caustics) at elevated temperatures. Avoid acids and strong oxidising agents
<i>HAZARDOUS THERMAL DECOMPOSITION PRODUCTS</i>	Thermal decomposition may produce oxides of carbon (CO, CO <sub>2</sub> ) and nitrogen.



## 11. TOXICOLGICAL INFORMATION

### ACUTE TOXICITY

#### 2-Butanone

Dermal, LD50 (rabbit) 6480 mg/Kg  
 Inhalation LC50 (rat, female) 3000 ppm, 6-15 day ingestion.  
 Fetotoxic effects: increased incidence of minor skeletal variations;  
 delayed bone formation; reduced fetal weight with slight maternal  
 toxicity.

Inhalation LC50 (rat, male) 23500 mg/m<sup>3</sup> 8 hour.  
 Inhalation TCLo (human) 100 ppm, 5 minutes  
 olfaction effects, conjunctiva irritation and respiratory changes.

Oral LD50 (rat) 2737 mg/Kg

#### Ethanol

Dermal LD50 (rabbit) 20'000 mg/Kg  
 Inhalation LC50, 10 hour (rat) 20'000 ppm  
 Oral LD50 (rat) 7060 mg/Kg  
 Oral LDLo (human) 1400 mg/Kg  
 Oral TDLo (human) 1.4 mg/Kg

Change in motor activity, ataxia, anti-psychotic.

#### Ethyl Acetate

Oral LD50 (rat) 5'620 mg/Kg  
 Inhalation LC50 (rat) 5 mg/L

No evidence of carcinogenic properties. No evidence of mutagenic or  
 teratogenic effects. Degreasing effect on skin. Irritant to skin eyes and by  
 inhalation. Absorbed by skin contact. High concentration can produce  
 narcosis.

### INHALATION EFFECTS

Toxic by inhalation. Irritating to respiratory system.

### EYE EFFECTS

Irritating to eyes.

### SKIN EFFECTS

Irritating to skin. Defatting.

### ORAL EFFECTS

Toxic if swallowed. Irritating to respiratory system.

### SUBCHRONIC EFFECTS

Products represented by this MSDS have not been tested for subchronic  
 toxicological effects.

### CHRONIC EFFECTS/ CARCINOGENICITY

Products represented by this MSDS have not been tested for  
 carcinogenic toxicological effects

### COMPONENTS LISTED AS CARCINOGENS

OSHA: None listed  
 IARC: None listed  
 NTP: None listed

NB n-Propanol has been found to cause cancer in laboratory animals.  
 Evidence of reproductive effects.

### MUTAGENICITY

Products represented by this MSDS have not been tested for mutagenic  
 toxicological effects



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**REPRODUCTIVE EFFECTS**

Classified: Reproductive system/toxin/female,  
(Ethanol) Reproductive system/toxin/male [POSSIBLE (capitals)]  
CAS 64-17-5.

Classified: PROVEN (capitals) for humans CAS 64-17-5.  
(Ethanol)

## 12. ECOLOGICAL INFORMATION

**ECOTOXICOLOGICAL INFORMATION**

None available.

**CHEMICAL FATE INFORMATION**

None available.

## 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with federal, state and local environmental laws and regulations. Do not reuse wasted containers.

## 14. TRANSPORT INFORMATION

**GROUND TRANSPORT**

Classified as Dangerous Goods (Class 3 flammable liquid) according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. Refer to relevant regulations for storage and transport requirements.

**AIR TRANSPORT**

Classified as Dangerous Goods (Class 3 flammable liquid). Product regulated by IATA

**OCEAN TRANSPORT**

Classified as Dangerous Goods (Class 3 flammable liquid.) Product regulated by IMCO

**INCOMPATIBLE CHEMICALS FOR TRANSPORT**

Class 3 - Flammable Liquids are incompatible in a placard load with any of the following:

- Class 1 Explosives
- Class 2.1 Flammable Gases, if both the Class 3 and Class 2.1 dangerous goods are in bulk
- Class 2.3 Toxic Gases
- Class 4.2 Spontaneously Combustible Gases
- Class 5.1 Oxidising Agents
- Class 5.1 Organic Peroxides
- Class 6 Toxic Substances
- Class 7 Radioactive Substances

## 15. REGULATORY INFORMATION

**AUSTRALIA**

Classified as Dangerous Goods (Class 3 flammable liquid) according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. Refer to relevant regulations for storage and transport requirements.

Classified as a C3 (FLAMMABLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS1940. Refer to state regulations for storage and transport requirements



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## 16. OTHER INFORMATION

UN No: 1210

Hazchem Code: 3[Y]E

DG Class & Subsidiary Risk: C3, Highly flammable liquid. FLAMMABLE LIQUIDS

Packaging Group: II

EPG Number: Not Available

IERG Number: Not Available

Poison Schedule No: None Assigned

Risk Phrases: R11: Highly Flammable  
R36/37: Irritating to eyes and respiratory system.

Safety Phrases: S02: Keep out of reach of children.  
S09: Keep container in a well ventilated place..  
S16: Keep away from sources of ignition – NO SMOKING.  
S23: Do not breathe gas/fumes/vapor/spray.  
S26: In case of contact with eyes, rinse immediately with plenty of water and contact a Doctor or Poisons Information Center.  
S33: Take precautionary measure against static discharge.  
S24/25: Avoid contact with skin and eyes.  
S37/39: Wear suitable gloves and eye/face protection.  
S38: If insufficient ventilation, wear suitable respiratory equipment.  
S44/46: If swallowed, and contact a Doctor or Poisons Information Center immediately and show this container or label.

This Material Safety Data Sheet (MSDS) summarises at the date of issue our best knowledge of the health and safety hazard information of the product, and in particular how to handle and use the product in the workplace. Since Digital Ink Technologies Pty. Ltd. cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product in the workplace.

<i>Distributor</i>	<i>Poison Information Center</i>
C/O National Coding Technologies Pty Ltd 4, 74 Mason Street Campbellfield, Australia, 3061 Telephone: +613 93575533 Facsimile: +613 93575588 Business Hours: 8.30 am – 5.00pm Monday to Friday	Telephone: 13 11 26 (24 hours)