


# MATERIAL SAFETY DATA SHEET

## SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

<b>PRODUCT NAME: Metalon™ JS-A100 Series Silver Inkjet Ink</b> GENERAL USE: Commercial inkjet ink PRODUCT DESCRIPTION: Brown to gray liquid with characteristic odor		
MANUFACTURER'S NAME NCC Nano LLC dba Novacentrix	DATE PREPARED: March 27, 2017 SUPERSEDES: July 26, 2016	Page 1 of 5
ADDRESS (NUMBER, STREET, P.O. BOX) 400 Parker Drive, Suite 1110	TELEPHONE NUMBER FOR INFORMATION (512) 491-9500	
(CITY, STATE AND ZIP CODE) Austin, TX 78728	COUNTRY USA	EMERGENCY TELEPHONE NUMBER ChemTel Inc. 1- (800) 255-3924 Intl. + 01 (813) 248-0585

## SECTION 2 - HAZARDS IDENTIFICATION

<b>EMERGENCY OVERVIEW</b> Prolonged contact may cause skin & eye irritation. May be harmful if swallowed. Target organs include central nervous system, gastrointestinal tract, kidneys, and liver. Hazard Symbols for this product - Xi, N. Risk Phrases - R22, R36/37/38. See Section 15 for explanation of Risk Phrases.
<b>POTENTIAL HEALTH EFFECTS</b> INHALATION: High concentrations are irritating to the respiratory tract. May cause headache, dizziness, drowsiness, nausea, vomiting, and malaise. Exposure to high concentrations may cause kidney and liver damage.  SKIN: Brief contact may cause slight irritation. Prolonged contact may cause moderate reddening and swelling.  EYES: May cause slight to moderate irritation with possible symptoms such as burning sensation, tearing, redness, or swelling.  INGESTION: This product may be harmful if ingested. May cause irritation to the gastrointestinal tract, nausea, weakness, and vomiting. Large doses may be fatal.

CARCINOGENICITY	NTP?	No	IARC MONOGRAPHS?	No	OSHA REGULATED?	No
-----------------	------	----	------------------	----	-----------------	----

## SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	CAS #	EINECS #	% (by weight)	OSHA PEL		ACGIH TWA		RQ LBS
				ppm	mg/m3	ppm	mg/m3	
Silver (a,b,c)	7440-22-4	231-131-3	25 - 45		0.01		0.1	1000
Diethylene glycol (a)	111-46-6	203-872-2	10 - 40	not established				

The remaining components of this product are non-hazardous or are in small enough quantities as to not meet regulatory thresholds for disclosure. These components contain no substances or impurities which would influence the classification of this product.

(a,c) See Section 15  
 (b) Indicates that the Resource Conservation and Recovery Act (RCRA) has determined the waste for this chemical is listed as hazardous and must be handled according to regulations in 40 CFR 260-281.

MATERIAL SAFETY DATA SHEET	
PRODUCT NAME: Metalon™ JS-A100 Series Silver Inkjet Ink March 27, 2017	Page 2 of 5
<b>SECTION 4 - FIRST AID MEASURES</b>	
INHALATION: Remove affected person to fresh air. Provide oxygen if breathing is difficult. If affected person is not breathing, administer CPR and seek emergency medical attention.	
SKIN: Remove contaminated clothing. Wash affected area with soap and water. Launder contaminated clothing before reuse. If irritation persists, seek medical attention.	
EYES: Check for and remove contact lenses. Flush eyes with clear running water for 15 minutes while holding eyelids open. If irritation persists, seek medical attention.	
INGESTION: Give two glasses of water for dilution. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention.	
<b>SECTION 5 - FIRE FIGHTING MEASURES</b>	
FLASH POINT (METHOD USED) > 93.3°C (> 200°F)	FLAMMABLE LIMITS LEL: Not applicable UEL: Not applicable AUTOIGNITION TEMPERATURE: Not determined NFPA CLASS: <b>IIIB</b>
GENERAL HAZARDS: Product will support combustion. Products of combustion include silver oxide, carbon monoxide, carbon dioxide, and various hydrocarbons.	
EXTINGUISHING MEDIA Carbon dioxide, water fog, dry chemical, chemical foam.	
FIRE FIGHTING PROCEDURES Self - contained respiratory equipment. Closed containers may be ruptured by heat due to temperature increase and pressure buildup within the containers. Cool containers with water spray / fog to prevent further heat generation, pressure buildup, and possible explosion when exposed to extreme heat.	
UNUSUAL FIRE AND EXPLOSION HAZARDS Closed containers may rupture or explode due to generation of heat or pressure when exposed to extreme heat or flames.	
HAZARDOUS COMBUSTION PRODUCTS Smoke fumes, silver oxide, carbon monoxide, carbon dioxide, and various hydrocarbons.	
<b>SECTION 6 - ACCIDENTAL RELEASE MEASURES</b>	
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Confine and absorb into approved absorbent; place material into approved containers for disposal; for spills in excess of allowable quantities (RQ) notify the National Response Center (800) 424 - 8802; refer to CERCLA 40 CFR 302 for detailed instructions; refer to SARA Title III, Section 313, 40 CFR 372 for reporting requirements. Do not discharge into lakes, ponds, streams or public waters.	
<b>SECTION 7 - HANDLING AND STORAGE</b>	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep container tightly closed when not in use. Store product in a dry, cool, and properly ventilated area. Avoid exposure to heat, oxidizing agents, and open flame. Avoid contact of product with eyes, skin, and clothes. Avoid inhalation of vapor or mist. Keep this product out of the reach of children.	
<b>SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION</b>	
<b>ENGINEERING CONTROLS</b> The use of local exhaust ventilation is recommended. No other special controls are indicated.	
<b>PERSONAL PROTECTION:</b>	
RESPIRATORY PROTECTION: None required while threshold limits are kept below maximum allowable concentrations; if TWA exceeds limits, NIOSH approved respirator must be worn. Respiratory protection must be provided in accordance with OSHA regulations (29 CFR 1910.134) or European Standard EN 149, as applicable.	
PROTECTIVE GLOVES: Neoprene, butyl or nitrile rubber gloves with cuffs.	
EYE PROTECTION: Chemical splash goggles. Refer to 29 CFR 1910.133, ANSI Z87.1, or European Standard EN166.	
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls, apron, or other equipment should be worn to minimize skin contact.	
WORK / HYGIENIC PRACTICES: Practice safe workplace habits. Safety showers and safety eyewash nearby.	

**MATERIAL SAFETY DATA SHEET**

PRODUCT NAME: Metalon™ JS-A100 Series Silver Inkjet Ink  
 March 27, 2017

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE AND ODOR Brown to gray liquid with characteristic odor	VAPOR DENSITY (AIR = 1) > 1
SPECIFIC GRAVITY (WATER = 1) 1.4 to 1.7	EVAPORATION RATE (Water = 1) ≤ 1
SOLUBILITY IN WATER Disperses	% VOLATILE (BY WEIGHT) Not specified
pH Not specified	VAPOR PRESSURE Not specified
BOILING POINT Not specified	FREEZING POINT Not specified
VISCOSITY Not specified	VOLATILE ORGANIC COMPOUNDS (VOC's) Not specified

**SECTION 10 - STABILITY AND REACTIVITY**

STABILITY UNSTABLE: STABLE: X	CONDITIONS TO AVOID: High temperatures, oxidizing conditions, and open flame.
-------------------------------------	---

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers, strong acids, and zinc.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Decomposition will not occur if handled and stored properly. In case of a fire, smoke fumes, silver oxide, carbon monoxide, carbon dioxide, and various hydrocarbons may be produced.

HAZARDOUS POLYMERIZATION  
 MAY OCCUR:  
 WILL NOT OCCUR: X

**SECTION 11 - TOXICOLOGICAL INFORMATION**

Hazardous Ingredients	CAS #	EINECS #	LD50 of Ingredient Species and Route	LC50 of Ingredient Species
Silver (a,b,c)	7440-22-4	231-131-3	Not established	Not established
Diethylene glycol (a)	111-46-6	203-872-2	1000 mg / kg Oral - human	Not established
(a,c) See Section 15				

**SECTION 12 - ECOLOGICAL INFORMATION**

No data are available on the adverse effects of this material on the environment. Neither COD nor BOD data are available. Based on the chemical composition of this product it is assumed that the mixture can be treated in an acclimatized biological waste treatment plant system in limited quantities. However, such treatment should be evaluated and approved for each specific biological system. One of the ingredients in this mixture, silver, is considered to be very toxic to aquatic life.

**SECTION 13 - DISPOSAL CONSIDERATIONS**

WASTE DISPOSAL METHOD: Silver-bearing inks should be reclaimed for silver use. Dispose of in accordance with local, state, and federal regulations. Do not flush to sanitary sewer or waterway. Refer to 40 CFR 260 - 299 for complete waste disposal regulations. Consult your local, state, or federal agency before disposing of any chemicals. According to the European Waste Catalogue, waste codes are application specific and should be assigned by the user based on the application for which the product is used.

**SECTION 14 - TRANSPORT INFORMATION**

PROPER SHIPPING NAME: Non - Hazardous for Transport

DOT HAZARD CLASS / Pack Group: Not regulated  
 REFERENCE: Not applicable  
 UN / NA IDENTIFICATION NUMBER: None  
 LABEL: None required  
 HAZARD SYMBOLS: None

IATA HAZARD CLASS / Pack Group: Not regulated  
 IMDG HAZARD CLASS: Not regulated  
 RID/ADR Dangerous Goods Code: Not regulated  
 UN TDG Class / Pack Group: Not regulated  
 Hazard Identification Number (HIN): None

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG, and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

**MATERIAL SAFETY DATA SHEET**

PRODUCT NAME: Metalon™ JS-A100 Series Silver Inkjet Ink  
 March 27, 2017

**SECTION 15 - REGULATORY INFORMATION**

**TSCA (Toxic Substance Control Act)**

All components of this product are listed on the U.S. Toxic Substances Control Act Chemical Inventory (TSCA Inventory) or are exempted from listing because a Low Volume Exemption has been granted in accordance with 40 CFR 723.50.

**SARA TITLE III (Superfund Amendments and Reauthorization Act)**

302  
 No chemicals in this product are subject to the reporting requirements of SARA Title III, Section 302.

311/312 Hazard Categories  
 Immediate health, Target organ effect

313 Reportable Ingredients:  
 (a) Indicates a toxic chemical subject to annual reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

**CERCLA (Comprehensive Response Compensation and Liability Act)**

(c) The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) has notification requirements for releases or spills to the environment of the Reportable Quantity (RQ for this mixture = 1200 lbs) or greater amounts, according to 40 CFR 302.

**California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986**

There are no reportable chemicals present known to the state of California to cause cancer or reproductive toxicity.

**CPR (Canadian Controlled Products Regulations)**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. WHMIS Classification: D2B

**IDL (Canadian Ingredient Disclosure List)**

Components of this product identified by CAS number and listed on the Canadian Ingredient Disclosure List are shown in Section 3.

**DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List)**


Components of this product identified by CAS number are listed on the DSL or NDSL, or are otherwise in compliance with the New Substances Notification (NSN) regulations. Only ingredients classified as "hazardous" are listed in Section 3 unless otherwise indicated.

**EINECS (European Inventory of Existing Commercial Chemical Substances)**

Components of this product identified by CAS numbers are on the European Inventory of Existing Commercial Chemical Substances.

**WGK Water Quality Index: 3**

**VbK Index: A III**

<p><b>Risk Phrases</b>                  R22 Harmful if swallowed                   R36/37/38 Irritating to eyes, respiratory system, and skin</p>	<p><b>SYMBOL(S) REQUIRED FOR LABEL</b></p> <p>Dangerous to the environment      Health</p>  <p>Irritant</p>	<p><b>Safety Phrases</b>                  S1/2 Keep locked up and out of the reach of children                   S15 Keep away from heat                  S16 Keep away from sources of ignition- No smoking                  S20/21 When using do not eat, drink, or smoke                  S24/25 Avoid contact with eyes and skin                   S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice                   S29/35 Do not empty into drains; dispose of this material and its container in a safe wa</p>
---	--	--

**MATERIAL SAFETY DATA SHEET**

PRODUCT NAME: Metalon™ JS-A100 Series Silver Inkjet Ink  
March 27, 2017

**SECTION 16 - OTHER INFORMATION**

Specific toxicity tests have not been conducted on this product. Our hazard evaluation is based on information from similar products, the ingredients, technical literature, and/or professional experience.

**HMIS HAZARD RATINGS**

HEALTH	2	* = Chronic Health Hazard	2 = MODERATE
FLAMMABILITY	1	0 = INSIGNIFICANT	3 = HIGH
PHYSICAL HAZARD	0	1 = SLIGHT	4 = EXTREME

PERSONAL PROTECTIVE EQUIPMENT C Safety Glasses, Gloves, Apron

**REVISION SUMMARY:**

This MSDS has been revised in the following sections:  
No changes noted

**MSDS Prepared by:**

NCC Nano LLC dba Novacentrix  
400 Parker Drive Suite 1110  
Austin, TX 78728 USA  
(512) 491 - 9500

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.