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1. IDENTIFICATION

Product identifier

Product code **LWS2000CY**
Product name **Cyan**
Product category **2000 Series Micro Piezo Inkjet Ink**

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Industrial Printing Operations

Details of the supplier of the safety data sheet

UNITED STATES	UNITED KINGDOM
Nazdar Company	Nazdar Limited
8501 Hedge Lane Terrace	Barton Road
Shawnee, KS 66227	Heaton Mersey
Tel: +001-913-422-1888	Stockport, England SK4 3EG
Tel: +001-800-677-4657	Tel: +44 161 442 2111
Fax: +001-913-422-2294	
www.nazdar.com	

Emergency telephone number

USA: Chemtrec: +001-800-424-9300
Outside USA: Chemtrec: +001-703-527-3887
24 Hour Emergency Phone Number

2. HAZARDS IDENTIFICATION

Classification

Serious eye damage/eye irritation	Category 1 - (H318)
Specific target organ toxicity (single exposure)	Category 3 - (H336)

Label elements



Signal word
Danger

Hazard statements

H318 - Causes serious eye damage
H336 - May cause drowsiness or dizziness

Precautionary Statements

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P280 - Wear eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor
 P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Hazards not otherwise classified (HNOC)

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	CAS No	Weight-%	Trade secret	Note
Diethylene glycol diethyl ether	112-36-7	30 - 60	*	
Butyrolactone	96-48-0	10 - 30	*	
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10	*	
Triethylene glycol monobutyl ether	143-22-6	1 - 5	*	
Additive	Not Available	0.1 - < 1	*	

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

Description of first aid measures

General Advice	Show this safety data sheet to the doctor in attendance.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention if irritation develops and persists.
Skin Contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation (redness, rash, blistering) develops, get medical attention.
Inhalation	If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately. Remove person to fresh air and keep comfortable for breathing.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed

None under normal use conditions.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water spray. Carbon dioxide (CO₂). Foam. Dry chemical. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. May emit toxic fumes under fire conditions.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Sealed containers may rupture when heated. Cool containers / tanks with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions

Evacuate personnel to safe areas. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid contact with eyes, skin and clothing. Ventilate the area. Avoid breathing dust or vapor.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Keep out of drains, sewers, ditches and waterways.

Methods and material for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Use clean non-sparking tools to collect absorbed material.

7. HANDLING AND STORAGE

Precautions for safe handling**Handling**

Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Use personal protective equipment as required.

Conditions for safe storage, including any incompatibilities**Storage**

Keep away from open flames, hot surfaces and sources of ignition. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use.

Incompatible Products

Strong oxidizing agents. Strong acids. Strong bases. Reducing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Exposure limits**

Chemical name	ACGIH TLV
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm

Chemical name	Ontario TWAEV
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm

Chemical name	Mexico OEL (TWA)
Ethylene glycol monobutyl ether acetate 112-07-2	TWA/VLE-PPT: 20 ppm

Appropriate engineering controls**Engineering Measures**

In case of insufficient ventilation, wear suitable respiratory equipment. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Users are advised to consider national Occupational Exposure Limits or other equivalent values.

Individual protection measures, such as personal protective equipment**Eye/Face Protection**

Wear safety glasses with side shields (or goggles). Ensure that eyewash stations and safety showers are close to the workstation location. If splashes are likely to occur. Wear suitable face shield.

Skin Protection	Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Hand Protection	Chemical resistant protective gloves. Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding >480 minutes of permeation time): eg. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers. Taking into account the varying conditions, the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Due to different glove types, the manufacturer's directions for use should be observed. Replace gloves immediately when torn or any change in appearance is noticed such as dimension, color, flexibility.
Respiratory Protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes, skin and clothing. Wear suitable gloves and eye/face protection. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before eating, drinking or smoking. Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Appearance	Colored
Odor	Characteristic	Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		No data available
Melting Point / Freezing Point	No information available	No data available
Boiling Point / Boiling Range	> 149 °C / 300 °F	
Flash Point	82 °C / 180 °F	Closed cup (Minimum)
Evaporation rate		No data available
Flammability Limit in Air		
Upper flammability limit		No data available
Lower flammability limit		No data available
Vapor Pressure		No data available
Vapor Density		No data available
Specific Gravity	1	
Water Solubility		No data available
Solubility in other solvents		No data available
Partition coefficient: n-octanol/water		No data available
Autoignition Temperature	No information available	No data available
Hyphen		No data available
Kinematic viscosity		No data available
Dynamic viscosity		No data available
Explosive Properties	No data available	
Oxidizing Properties	No data available	

Other information

Photochemically Reactive	No
Weight Per Gallon (lbs/gal)	8.3

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
92.06	92.82	7.65	916.71

10. STABILITY AND REACTIVITY

Reactivity

No information available.

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

None under normal processing.

Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition.

Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases. Reducing agent.

Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide. Carbon dioxide (CO₂).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation

Specific test data for the substance or mixture is not available.

Eye Contact

Specific test data for the substance or mixture is not available.

Skin Contact

Specific test data for the substance or mixture is not available.

Ingestion

Specific test data for the substance or mixture is not available.

Chemical name	Oral LD50
Diethylene glycol diethyl ether 112-36-7	= 4970 mg/kg (Rat)
Butyrolactone 96-48-0	= 1540 mg/kg (Rat)
Ethylene glycol monobutyl ether acetate 112-07-2	= 2400 mg/kg (Rat)
Triethylene glycol monobutyl ether 143-22-6	= 5300 mg/kg (Rat)

Chemical name	Dermal LD50
Butyrolactone 96-48-0	> 5640 mg/kg (Rabbit)
Ethylene glycol monobutyl ether acetate 112-07-2	= 1500 mg/kg (Rabbit)
Triethylene glycol monobutyl ether 143-22-6	= 3540 mg/kg (Rabbit)
Additive	> 2000 mg/kg (Rat)

Chemical name	Inhalation LC50
Butyrolactone 96-48-0	> 5100 mg/m ³ (Rat) 4 h
Ethylene glycol monobutyl ether acetate 112-07-2	> 400 ppm (Rat) 4 h

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms

Specific test data for the substance or mixture is not available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Specific test data for the substance or mixture is not available.
Eye damage/irritation	Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components).
Irritation	Specific test data for the substance or mixture is not available.
Corrosivity	Specific test data for the substance or mixture is not available.
Sensitization	Specific test data for the substance or mixture is not available.
Mutagenic Effects	Specific test data for the substance or mixture is not available.
Carcinogenic effects	Specific test data for the substance or mixture is not available.
Reproductive Effects	Specific test data for the substance or mixture is not available.
STOT - single exposure	Specific test data for the substance or mixture is not available. May cause drowsiness or dizziness. (based on components).
STOT - repeated exposure	Specific test data for the substance or mixture is not available.
Chronic Toxicity	Specific test data for the substance or mixture is not available
Aspiration hazard	Specific test data for the substance or mixture is not available.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH
Ethylene glycol monobutyl ether acetate 112-07-2	A3

Numerical measures of toxicity - Product Information

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	6,374.20 mg/kg
ATEmix (dermal)	19,900.50 mg/kg
ATEmix (inhalation-dust/mist)	19.90 mg/l
ATEmix (inhalation-vapor)	145.90 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Specific test data for the substance or mixture is not available.

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants
Butyrolactone 96-48-0	96h EC50 Desmodesmus subspicatus: = 79 mg/L 72h EC50 Desmodesmus subspicatus: = 360 mg/L
Ethylene glycol monobutyl ether acetate 112-07-2	72h EC50 Desmodesmus subspicatus: > 500 mg/L
Triethylene glycol monobutyl ether 143-22-6	72h EC50 Desmodesmus subspicatus: > 500 mg/L

Chemical name	Fish
Butyrolactone 96-48-0	96h LC50 Lepomis macrochirus: = 56 mg/L (static)
Ethylene glycol monobutyl ether acetate 112-07-2	96h LC50 Oncorhynchus mykiss: 20 - 40 mg/L
Triethylene glycol monobutyl ether 143-22-6	96h LC50 Pimephales promelas: = 2400 mg/L (static) 96h LC50 Pimephales promelas: = 2400 mg/L

Chemical name	Crustacea
Butyrolactone 96-48-0	48h EC50 Daphnia magna Straus: > 500 mg/L
Ethylene glycol monobutyl ether acetate 112-07-2	48h EC50 Daphnia magna: = 37 mg/L

Triethylene glycol monobutyl ether 143-22-6	48h EC50 Daphnia magna: > 500 mg/L
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Persistence and Degradability

No information available.

Bioaccumulation

Chemical name	Partition coefficient
Butyrolactone 96-48-0	-0.566
Ethylene glycol monobutyl ether acetate 112-07-2	1.51
Triethylene glycol monobutyl ether 143-22-6	0.51

13. DISPOSAL CONSIDERATIONS

Waste treatment methods**Waste Disposal Methods**

Contain and dispose of waste according to local regulations.

Contaminated Packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

Note:

This information is not intended to convey all specific transportation requirements relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation information can be found in the specific regulations for your mode of transportation. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

DOT

Not regulated

ICAO / IATA / IMDG / IMO

Not Regulated

15. REGULATORY INFORMATION

International Inventories

For further information, please contact. All substances are listed as ACTIVE on the TSCA Inventory. Supplier (manufacturer/importer/downstream user/distributor).

U.S. Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
Diethylene glycol diethyl ether	112-36-7	30 - 60	1.0
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10	1.0
Triethylene glycol monobutyl ether	143-22-6	1 - 5	1.0

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:

Chemical name	CAS No	Weight-%
Diethylene glycol diethyl ether	112-36-7	30 - 60
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10
Triethylene glycol monobutyl ether	143-22-6	1 - 5

US State Regulations

Chemical name	New Jersey
Diethylene glycol diethyl ether 112-36-7	X
Ethylene glycol monobutyl ether acetate 112-07-2	X
Triethylene glycol monobutyl ether 143-22-6	X
Additive	X

Chemical name	Pennsylvania
Diethylene glycol diethyl ether 112-36-7	X
Ethylene glycol monobutyl ether acetate 112-07-2	X
Triethylene glycol monobutyl ether 143-22-6	X
Additive	X

California Proposition 65

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects

Canada

Chemical name	NPRI - National Pollutant Release Inventory
Diethylene glycol diethyl ether 112-36-7	Part 4 Substance - Criteria Air Contaminants
Butyrolactone 96-48-0	Part 4 Substance - Criteria Air Contaminants
Ethylene glycol monobutyl ether acetate 112-07-2	Part 5 Substance - Volatile Organic Compounds with Additional Reporting Requirements Part 4 Substance - Criteria Air Contaminants
Additive	Part 1, Group A Substance

16. OTHER INFORMATION

HMIS	Health hazards	Flammability	Reactivity	Personal Protection
	3 *	2	0	X

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)
STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value

ACGIH: (American Conference of Governmental Industrial Hygienists)

- A1 - Known Human Carcinogen
- A2 - Suspected Human Carcinogen
- A3 - Animal Carcinogen

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
Group 3 - Not Classifiable as to Carcinogenicity in Humans
NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated to be a Human Carcinogen
OSHA: (Occupational Safety & Health Administration)
X - Present

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Pursuant to NOM-018-STPS-2015

This information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet