

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

Product code LWS2000CY
Product name Cyan
Product description Lyson® 2000 Series Micro Piezo Inkjet Ink

Manufacturer or supplier's details

UNITED STATES
 Nazdar Company
 8501 Hedge Lane Terrace
 Shawnee, KS 66227
 Tel: 1-913-422-1888
 Tel: 1-800-677-4657
 Fax: 1-913-422-2294

UNITED KINGDOM
 Nazdar Limited
 7 Barton Road
 Heaton Mersey Industrial Estate
 Stockport, Chesire SK4 3EG
 Tel: +44 161 442 2111

Emergency Telephone Number

USA: Chemtrec: 1-800-424-9300
 Outside USA: Chemtrec: 1-703-527-3887

Website: www.nazdar.com
 MSDS Information: 1-913-422-1888 ext 2305
 MSDS Contact: Regulatory Compliance
 email: regcomp@nazdar.com

2. HAZARDS IDENTIFICATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

Classification

Xi;R36
 Xi - Irritant

Xi



Most Important Hazards

Irritating to eyes

Appearance Emergency Overview

Viscous liquid
 Irritant.

Eyes May cause eye irritation.
Skin May cause skin irritation and/or dermatitis.
Inhalation May cause irritation of respiratory tract. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	EC No.	CAS-No	Weight %	Classification
Diethylene glycol diethyl ether	203-963-7	112-36-7	50 - 60	Xi;R36
Gamma Butyrolactone	202-509-5	96-48-0	10 - 20	Xn;R22 Xi;R36
Ethylene glycol monobutyl ether acetate	203-933-3	112-07-2	5 - 10	Xn;R20/21
Dimethyl Glutarate	214-277-2	1119-40-0	5 - 10	Xi;R36/38
Dimethyl Adipate	211-020-6	627-93-0	1 - 5	Xn;R22

For the full text of the R-phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

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 immediately if irritation develops and persists.
Skin Contact	Wash off immediately with soap and plenty of water. Use a mild soap if available. Rinse immediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation develops, get medical attention.
Inhalation	Move to fresh air. If breathed in, move person into fresh air. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.
Ingestion	If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Flammable Properties	No information available
Suitable Extinguishing Media	Foam. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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. Keep away from fire, sparks and heated surfaces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or intense heat may cause violent rupture of packages.
Specific Hazards Arising from the Chemical	Thermal decomposition can lead to release of irritating gases and vapours. Burning produces obnoxious and toxic fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Remove all sources of ignition. Heat, flames and sparks. Ventilate the area. Avoid breathing dust or vapor. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Methods for Cleaning Up	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Do not use sparking tools.
Environmental Precautions	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

7. HANDLING AND STORAGE

Handling	Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove and wash contaminated clothing before re-use. Discard contaminated shoes. When using do not smoke. Take notice of labels and material safety data sheets for the working chemicals. Do not take internally. Harmful or fatal if swallowed.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep out of the reach of children. Keep away from heat and sources of ignition. Take notice of the directions of use on the label.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits

Component	European Union	The United Kingdom	France	Spain	Germany
Ethylene glycol monobutyl ether acetate		STEL: 50 ppm TWA: 20 ppm Skin	VME: 2 ppm VME: 13.3 mg/m ³ VLCT: 30 ppm VLCT: 199.8 mg/m ³ Skin	Skin VLA-EC: 333 mg/m ³ VLA-EC: 50 ppm VLA-ED: 133 mg/m ³ VLA-ED: 20 ppm	MAK: 10 ppm MAK: 66 mg/m ³ Skin Peak: 132 mg/m ³ Peak: 20 ppm

Component	Italy	Portugal	The Netherlands	Finland	Austria
Ethylene glycol monobutyl ether acetate	TWA: 133 mg/m ³ TWA: 20 ppm STEL: 333 mg/m ³ STEL: 50 ppm Skin	TWA: 20 ppm Skin notation	Skin STEL: 333 mg/m ³ TWA: 135 mg/m ³	TWA: 20 ppm TWA: 130 mg/m ³ STEL: 50 ppm STEL: 330 mg/m ³ Skin	Skin STEL: 40 ppm STEL: 270 mg/m ³ MAK: 20 ppm MAK: 133 mg/m ³

Component	Switzerland	Poland	Norway	Ireland	Denmark
Ethylene glycol monobutyl ether acetate	Skin STEL: 80 ppm STEL: 540 mg/m ³ MAK: 20 ppm MAK: 135 mg/m ³	NDSCh: 300 mg/m ³ NDS: 100 mg/m ³	TWA: 65 mg/m ³ TWA: 10 ppm Skin	TWA: 20 ppm TWA: 133 mg/m ³ STEL: 50 ppm STEL: 333 mg/m ³ Skin	TWA: 130 mg/m ³ TWA: 20 ppm Skin
Dimethyl Glutarate	STEL: 20 mg/m ³ STEL: 3 ppm MAK: 3 ppm MAK: 20 mg/m ³				
Dimethyl Adipate	STEL: 1 mg/m ³ STEL: 0.14 ppm MAK: 1 mg/m ³ MAK: 0.14 ppm				

Occupational exposure controls

Engineering Measures

Use only with adequate ventilation. Use ventilation adequate to keep exposures below recommended exposure limits. See MSDS. In case of insufficient ventilation, wear suitable respiratory equipment.

Personal Protective Equipment **Respiratory Protection**

Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Respirator with a vapour filter.

Eye Protection

Ensure that eyewash stations and safety showers are close to the workstation location. Avoid contact with eyes. Safety glasses with side-shields. Goggles. Face-shield.

Skin Protection **Hand Protection**

Wear protective gloves/clothing. Solvent-resistant apron and boots. Nitrile rubber. Neoprene gloves.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before eating, drinking, or smoking. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection.

Environmental exposure controls

No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance	Viscous liquid	Physical State	Liquid
Odor	Characteristic	Odor Threshold	No information available
pH	No information available	Autoignition Temperature	No information available
Boiling point/Boiling Range	>149°C / >300°F	Melting Point/Range	No information available
Freezing Point/Range	No information available	Solubility	No information available
Evaporation Rate	No information available	Partition Coefficient (n-octanol/water)	No information available
Vapour Pressure	No information available	Vapour Density	No information available
Flammability (solid, gas)	No information available		
Flammability Limits in Air		Flash Point	67°C / 153°F
Upper	No information available	Method	Closed cup
Lower	No information available		
		Photochemically Reactive	No
Weight Per Gallon (lbs/gal)	8.167	Specific Gravity	0.98

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Heat, flames and sparks.
Incompatible Products	Strong acids. Strong bases. Strong oxidizing agents. Reducing agents.
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO ₂). Carbon monoxide.
Possibility of Hazardous Reactions	None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diethylene glycol diethyl ether	4970 mg/kg (Rat)	6700 µL/kg (Rabbit)	
Gamma Butyrolactone	1540 mg/kg (Rat)		2.68 mg/L (Rat) 4 h
Ethylene glycol monobutyl ether acetate	1600 mg/kg (Rat)	1480 mg/kg (Rabbit)	
Dimethyl Glutarate	8191 mg/kg (Rat)		5.6 mg/L (Rat) 4 h
Dimethyl Adipate	1920 mg/kg (Rat)		

Chronic Toxicity

No information available

Sensitisation	No information available
Neurological Effects	No information available
Mutagenic Effects	No information available
Reproductive Effects	No information available
Developmental Effects	No information available
Teratogenicity	No information available
Chronic Effects	No information available
Target Organ Effects	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

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We have no quantitative data concerning the ecological effects of this product. Environmental fate information is derived from consideration of the properties of the ingredients. Should not be released into the environment.

Component	Freshwater Algae	Freshwater Fish	Water Flea
Gamma Butyrolactone	72 Hr EC50 Scenedesmus subspicatus: 360 mg/L; 96 Hr EC50 Scenedesmus subspicatus: 79 mg/L	96 Hr LC50 Leuciscus idus: 220-460 mg/L [static]	48 Hr EC50 Daphnia magna Straus: >500 mg/L
Ethylene glycol monobutyl ether acetate	72 Hr EC50 Scenedesmus subspicatus: >500 mg/L		48 Hr EC50 water flea: 37 mg/L
Dimethyl Glutarate		96 Hr LC50 Pimephales promelas: 19.6-26.2 mg/L [static]	48 Hr EC50 Daphnia magna: 122.1-163.5 mg/L

Persistence and Degradability No information available
Bioaccumulation No information available
Mobility in Environmental Media No information available

Component	log Pow
Gamma Butyrolactone	-0.566
Ethylene glycol monobutyl ether acetate	1.51

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of contents/container in accordance with local regulation.
Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

RID Not classified as dangerous in the meaning of transport regulations
ADR Not classified as dangerous in the meaning of transport regulations
IMDG/IMO Not classified as dangerous in the meaning of transport regulations
ICAO/IATA Not classified as dangerous in the meaning of transport regulations

15. REGULATORY INFORMATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC

Labelling

Symbol(s) Xi - Irritant



R -phrase(s)

R36 - Irritating to eyes

S -phrase(s)

S 2 - Keep out of the reach of children
S25 - Avoid contact with eyes

International Inventories

Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

REACH: Substances of Very High Concern (SVHC): Article 57 of Regulation (EC) No 1907/2006

Does NOT contain a listed substance

16. OTHER INFORMATION**Text of R phrases mentioned in Section 3**

R36 - Irritating to eyes
R22 - Harmful if swallowed
R20/21 - Harmful by inhalation and in contact with skin
R36/38 - Irritating to eyes and skin

Revision Date	Feb-16-2010
Revision Summary	New MSDS format

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