



Material Safety Data Sheet

Prepared in accordance with ISO 11014-1/ANSI standard Z400.1-2004

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1. PRODUCT AND COMPANY IDENTIFICATION

Product code LWS2100KK
Product name Black
Product description Lyson® 2100 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
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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

This product is a preparation. Health hazard information is based on its components.

Appearance Viscous liquid.
Flammable Properties Combustible liquid and vapor.
Emergency Overview Irritant. May cause drowsiness and dizziness.
Eyes May irritate eyes.
Skin May cause skin irritation and/or dermatitis.
Inhalation 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	CAS-No	Weight %
Diethylene glycol diethyl ether	112-36-7	30 - 60
Gamma Butyrolactone	96-48-0	10 - 30
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10
Dimethyl Glutarate	1119-40-0	5 - 10
Carbon black	1333-86-4	1 - 5
Dimethyl Adipate	627-93-0	1 - 5
Dimethyl Succinate	106-65-0	1 - 5

4. FIRST AID MEASURES

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.

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.

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	Combustible liquid and vapor.
Suitable Extinguishing Media	Foam. Carbon dioxide (CO ₂). 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 Guidelines

Component	Weight %	ACGIH TLV	OSHA PEL	Ontario TWAEV
Ethylene glycol monobutyl ether acetate	5 - 10	TWA: 20 ppm		TWA: 20 ppm
Carbon black	1 - 5	TWA: 3.5 mg/m ³	TWA: 3.5 mg/m ³	TWA: 3.5 mg/m ³

Component	Weight %	NIOSH IDLH	Mexico OEL (TWA)
Carbon black	1 - 5	1750 mg/m ³	TWA: 3.5 mg/m ³ STEL: 7 mg/m ³

NIOSH IDLH: *Immediately Dangerous to Life or Health*

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.
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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

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

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

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	Heavier than air
Flammability (solid, gas)	No information available	Flash Point	67°C / 153°F
Flammability Limits in Air		Method	Setaflash closed cup
Upper	No information available	Photochemically Reactive	No
Lower	No information available	Specific Gravity	No information available
Weight Per Gallon (lbs/gal)	8.164	VOC by volume	94.291
VOC by weight	93.43	VOC grams/liter	914.912
VOC lbs/gal	7.635		

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
Carbon black	15400 mg/kg (Rat)	3 g/kg (Rabbit)	
Dimethyl Adipate	1920 mg/kg (Rat)		

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Dimethyl Succinate	5000 mg/kg (Rat)	5000 mg/kg (Rabbit)	

Chronic Toxicity

Component	ACGIH	IARC	NTP	OSHA
Ethylene glycol monobutyl ether acetate	A3			
Carbon black		Group 2B		X

Legend:

ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)

OSHA: (Occupational Safety & Health Administration)

A3 - Animal Carcinogen
Group 2B - Possibly Carcinogenic to Humans

X - Present

Sensitisation

No information available

Mutagenic Effects

No information available

Reproductive Effects

No information available

Developmental Effects

No information available

Teratogenicity

No information available

Chronic Effects

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effect, such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system.

Target Organ Effects

Blood, Central nervous system, Eyes, Hematopoietic System, Kidney, Liver, Lymphatic System, Respiratory system, Skin.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

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
Carbon black			24 Hr EC50 Daphnia magna: >5600 mg/L
Dimethyl Succinate		96 Hr LC50 Brachydanio rerio: 50-100 mg/L [static]	

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
Dimethyl Succinate	0.19

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

DOT

Printing Ink, Not Regulated

ICAO/IATA

Not classified as dangerous in the meaning of transport regulations

IMDG/IMO

Not classified as dangerous in the meaning of transport regulations

15. REGULATORY INFORMATION

International Inventories

Listed on TSCA. For further information, please contact: Nazdar email: regcomp@nazdar.com

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

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Ethylene glycol monobutyl ether acetate	112-07-2	8.450	1.0
Diethylene glycol diethyl ether	112-36-7	59.950	1.0

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

This product contains the following HAPs:

Component	CAS-No	Weight %
Ethylene glycol monobutyl ether acetate	112-07-2	8.450
Diethylene glycol diethyl ether	112-36-7	59.950

U.S. State Regulations**California Prop. 65**

WARNING! This product contains a chemical known in the State of California to cause cancer. WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Component	CAS-No	Weight %
Carbon black	1333-86-4	3.25
Vinyl chloride	75-01-4	1.5e-007
Toluene	108-88-3	0.00015

State Right-to-Know

Component	Minnesota	Florida	New Jersey	Pennsylvania	Massachusetts	Rhode Island
Diethylene glycol diethyl ether	Not Listed	Not Listed	X	X	Not Listed	Not Listed
Gamma Butyrolactone	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Ethylene glycol monobutyl ether acetate	Not Listed	Not Listed	X	X	Not Listed	Not Listed
Dimethyl Glutarate	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Carbon black	Not Listed	Not Listed	X	X	X	X
Dimethyl Adipate	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Dimethyl Succinate	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed

Canada

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR

Component	WHMIS Classifications of Components
Ethylene glycol monobutyl ether acetate	B3
Carbon black	D2A

Component	NPRI - National Pollutant Release Inventory
Diethylene glycol diethyl ether	Part 4 Substance
Gamma Butyrolactone	Part 4 Substance
Ethylene glycol monobutyl ether acetate	Part 4 Substance Part 5 Substance
Dimethyl Glutarate	Part 4 Substance
Dimethyl Adipate	Part 4 Substance
Dimethyl Succinate	Part 4 Substance

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

Does NOT contain a listed substance

HMIS:

Health	Flammability	Instability	PPE
3*	2	0	X

16. OTHER INFORMATION

Revision Date Sep-24-2008

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 MSDS