

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product code** LWS2000KK  
**Product name** Black  
**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](http://www.nazdar.com)  
 MSDS Information: 1-913-422-1888 ext 2305  
 MSDS Contact: Regulatory Compliance  
 email: [regcomp@nazdar.com](mailto: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** Harmful to aquatic organisms. Irritant. May cause drowsiness and dizziness.  
**Eyes** Moderately irritating to the eyes. Risk of serious damage to eyes. Avoid contact with 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  | 60 - 100 |
| 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

|  |  |
|--|--|
| <b>Flammable Properties</b>                                  | Combustible liquid and vapor.  |
| <b>Suitable Extinguishing Media</b>                          | Foam. Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  |
| <b>Protective Equipment and Precautions for Firefighters</b> | 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. |
| <b>Specific Hazards Arising from the Chemical</b>            | Thermal decomposition can lead to release of irritating gases and vapours. Burning produces obnoxious and toxic fumes.   |

## 6. ACCIDENTAL RELEASE MEASURES

|                                  |  |
|----------------------------------|--|
| <b>Personal Precautions</b>      | 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.              |
| <b>Methods for Cleaning Up</b>   | 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. |
| <b>Environmental Precautions</b> | 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

|                 |  |
|-----------------|--|
| <b>Handling</b> | 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. |
| <b>Storage</b>  | 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 <sup>3</sup> | TWA: 3.5 mg/m <sup>3</sup> | TWA: 3.5 mg/m <sup>3</sup> |

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

NIOSH IDLH: Immediately Dangerous to Life or Health

|                             |   |
|-----------------------------|---|
| <b>Engineering Measures</b> | 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**

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**

|                                    |                          |  |                          |
|------------------------------------|--------------------------|--|--------------------------|
| <b>Appearance</b>                  | Viscous liquid           | <b>Physical State</b>                          | Liquid                   |
| <b>Odor</b>                        | Characteristic           | <b>Odor Threshold</b>                          | No information available |
| <b>pH</b>                          | No information available | <b>Autoignition Temperature</b>                | No information available |
| <b>Boiling point/Boiling Range</b> | >149°C / >300°F          | <b>Melting Point/Range</b>                     | No information available |
| <b>Freezing Point/Range</b>        | No information available | <b>Solubility</b>                              | No information available |
| <b>Evaporation Rate</b>            | No information available | <b>Partition Coefficient (n-octanol/water)</b> | No information available |
| <b>Vapour Pressure</b>             | No information available | <b>Vapour Density</b>                          | Heavier than air         |
| <b>Flammability (solid, gas)</b>   | No information available | <b>Flash Point</b>                             | 67°C / 153°F             |
| <b>Flammability Limits in Air</b>  |                          | <b>Method</b>                                  | Closed cup               |
| <b>Upper</b>                       | No information available | <b>Photochemically Reactive</b>                | No                       |
| <b>Lower</b>                       | No information available | <b>Specific Gravity</b>                        | 0.98                     |
| <b>Weight Per Gallon (lbs/gal)</b> | 8.163                    | <b>VOC by volume</b>                           | No information available |
| <b>VOC by weight</b>               | 92.695                   | <b>VOC grams/liter</b>                         | 906.688                  |
| <b>VOC lbs/gal</b>                 | 7.567                    |  |                          |

**10. STABILITY AND REACTIVITY**

|   |  |
|---|--|
| <b>Chemical Stability</b>                 | Stable under normal conditions.  |
| <b>Conditions to Avoid</b>                | Heat, flames and sparks.   |
| <b>Incompatible Products</b>              | Strong acids. Strong bases. Strong oxidizing agents. Reducing agents.  |
| <b>Hazardous Decomposition Products</b>   | Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO <sub>2</sub> ). Carbon monoxide. |
| <b>Possibility of Hazardous Reactions</b> | 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    |

Carbon black is classified as a carcinogen by the IARC (possibly carcinogenic to humans, Group 2B). In their evaluation of carbon black, IARC indicates exposure to carbon black, per se, does not occur when it remains bound within a product matrix, specifically, rubber, ink, or paint. Carbon black is present only in a bound form in this preparation.

## Legend:

ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)

OSHA: (Occupational Safety &amp; 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. Blood, Central nervous system, Eyes, Hematopoietic System, Kidney, Liver, Lymphatic System, Respiratory system, Skin.

**Target Organ Effects****12. ECOLOGICAL INFORMATION****Ecotoxicity**

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. 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

|                               |  |
|-------------------------------|--|
| <b>Waste Disposal Methods</b> | Dispose of contents/container in accordance with local regulation.                             |
| <b>Contaminated Packaging</b> | 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: Manufacturer, importer, supplier

**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 |
|---|----------|----------|-----------------------------|
| Diethylene glycol diethyl ether         | 112-36-7 | 60 - 100 | 1.0                         |
| Ethylene glycol monobutyl ether acetate | 112-07-2 | 5 - 10   | 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 % |
|---|----------|----------|
| Diethylene glycol diethyl ether         | 112-36-7 | 60 - 100 |
| Ethylene glycol monobutyl ether acetate | 112-07-2 | 5 - 10   |

**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 | 1 - 5    |
| Vinyl chloride | 75-01-4   | < 0.0001 |
| Toluene        | 108-88-3  | < 0.01   |
| Benzene        | 71-43-2   | < 0.0001 |

**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   |

