**SECTION 2  COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Chemical Name / Generic name</th>
<th>CAS # / EC #</th>
<th>Weight %</th>
<th>EU Symbol/ R-Phrase</th>
<th>USA OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EU ILV</th>
<th>DFG MAK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin</td>
<td>56-81-5 / 200-289-5</td>
<td>2 - 6</td>
<td>None / None</td>
<td>(as mist) Total dust TWA = 15 mg/m³ Respirable fraction TWA = 5 mg/m³</td>
<td>(as mist) TWA = 10 mg/m³</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>Ethylene glycol</td>
<td>107-21-1 / 203-473-3</td>
<td>2 - 6</td>
<td>Xn / R22</td>
<td>Not established</td>
<td>(aerosol) Ceiling = 100 mg/m³</td>
<td>TWA = 20 ppm, 52 mg/m³ STEL = 40 ppm, 104 mg/m³</td>
<td>10 ppm, 26 mg/m³</td>
</tr>
<tr>
<td>Isopropyl alcohol</td>
<td>67-63-0 / 200-661-7</td>
<td>2 - 6</td>
<td>F / R11 Xi / R36 R67</td>
<td>TWA = 400 ppm, 980 mg/m³</td>
<td>TWA = 200 ppm, 492 mg/m³ STEL = 400 ppm, 984 mg/m³</td>
<td>Not established</td>
<td>200 ppm, 500 mg/m³</td>
</tr>
<tr>
<td>Ammonia derivative</td>
<td>Confidential</td>
<td>5 - 10</td>
<td>None / None</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5 / 231-79-12</td>
<td>65 - 85</td>
<td>None / None</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
</tbody>
</table>

**REDING:**
- **EU Symbol/R-Phrase:**
  - A
  - B
  - C
  - D
  - E
  - F
  - G
  - H
  - I
  - J
  - K
  - L
  - M
  - N
  - O
  - P
  - Q
  - R
  - S
  - T
  - U
  - V
  - W
  - X
  - Y
  - Z

**OSHA PEL:**
- 10 ppm, 26 mg/m³
- 20 ppm, 52 mg/m³
- 40 ppm, 104 mg/m³

**ACGIH TLV:**
- TWA = 15 mg/m³
- TWA = 10 mg/m³
- TWA = 20 ppm, 52 mg/m³
- TWA = 400 ppm, 980 mg/m³

**EU ILV:**
- TWA = 20 ppm, 52 mg/m³
- TWA = 400 ppm, 984 mg/m³
- STEL = 40 ppm, 104 mg/m³
- STEL = 400 ppm, 984 mg/m³

**DFG MAK:**
- Not established
- Not established
- Not established
- Not established

**OSHA PEL:**
- 10 ppm, 26 mg/m³
- 20 ppm, 52 mg/m³
- 40 ppm, 104 mg/m³
- 200 ppm, 500 mg/m³

**ACGIH TLV:**
- TWA = 15 mg/m³
- TWA = 10 mg/m³
- TWA = 20 ppm, 52 mg/m³
- TWA = 400 ppm, 980 mg/m³

**EU ILV:**
- TWA = 20 ppm, 52 mg/m³
- TWA = 400 ppm, 984 mg/m³
- STEL = 40 ppm, 104 mg/m³
- STEL = 400 ppm, 984 mg/m³

**DFG MAK:**
- Not established
- Not established
- Not established
- Not established

**Date of Issue:** February 6, 1995

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< Carcinogen >
No component of this ink is listed as a human carcinogen or a potential carcinogen in IARC Monographs, NTP, OSHA regulations or Annex I to Directive 67/548/EEC.

SECTION 3 HAZARDS IDENTIFICATION
EU Classification:
Not classified as dangerous.

Emergency Overview:
Ink cartridge containing black liquid ink with slight odor.

Potential Health Effects and Symptoms:

Inhalation:
No adverse effects are expected under intended use.
Over exposure to vapor or mist may cause respiratory tract irritation, cough, dizziness, drowsiness, headache and nausea.

Ingestion:
May cause abdominal pain, diarrhea, dizziness, drowsiness, dullness, headache, nausea and vomiting.

Eye:
May cause minimal irritation. (See SECTION 11)

Skin:
Neither irritation nor sensitization is expected. (See SECTION 11)

Chronic Effects:
Not identified

Medical Conditions Generally known to be Aggravated by Exposure:
Not identified

SECTION 4 FIRST AID MEASURES
First Aid Measures:

Inhalation:
If symptoms are experienced, move victim to fresh air and obtain medical advice.

Ingestion:
Rinse mouth. Give one or two glasses of water.
If irritation or discomfort occurs, obtain medical advice immediately.

Eye:
Immediately flush with lukewarm, gently flowing water for 5 minutes or until the chemical is removed.
If irritation persists, obtain medical advice immediately.

Skin:
Wash with water and soap or mild detergent.
If irritation persists, obtain medical advice.

Note to Physicians:
None
SECTION 5 FIRE FIGHTING MEASURES

Fire Fighting Measures:

Extinguishing Media:
- CO₂, water, foam or dry chemicals

Unsuitable Extinguishing Media:
- None

Special Fire Fighting Procedures:
- None

Unusual Fire and Explosion Hazards:
- None

Fire and Explosive Properties (See also Section 9):

Hazardous Combustion Products:
- CO, CO₂, and NOx

Other Properties:
- None

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions:
- Avoid contact with skin, eyes and clothing.

Environmental Precautions:
- Do not release to sewer, surface water or ground water.

Method for Cleaning Up:
- Wipe off with wet cloth or paper.

SECTION 7 HANDLING AND STORAGE

Handling:
- Use with adequate ventilation.
- Avoid contact with skin, eyes and clothing.
- In case of contact, wash out the contaminated area immediately.

Storage:
- Keep in a cool and dry place. Protect from sunlight.
- Keep away from heat and flame.
- Keep out of the reach of children.

Specific Uses:
- Ink for Ink Jet Printer.
- For more information, please refer to the instruction of this product.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines:
- Not established for this ink. (See also SECTION 2)

Engineering Controls:
- Use adequate ventilation.

Personal Protection Equipment(s):

Respiratory Protection:
- ☑ Required
- ✗ Not Required

Eye/Face Protection:
- ☑ Required
- ✗ Not Required

Skin Protection:
- ☑ Required
- ✗ Not Required

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### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Black liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight odor</td>
</tr>
<tr>
<td>pH</td>
<td>9.5 - 10.5</td>
</tr>
<tr>
<td>Boiling Point/Range(°C):</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point/Range(°C):</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition Temperature(°C):</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point(°C):</td>
<td>49.0 (Tag Closed Cup. Combustion is not sustainable.)</td>
</tr>
<tr>
<td>Flammable (Explosive) Limits:</td>
<td>Not available</td>
</tr>
<tr>
<td>Autoignition Temperature(°C):</td>
<td>Estimate: 510 - 520 (ASTM-E659)</td>
</tr>
<tr>
<td>Flammability:</td>
<td>Classified as &quot;Combustible liquid&quot; under OSHA-HCS. Not classified as &quot;flammable&quot; or &quot;combustible&quot; under FHSA. Not classified as &quot;flammable&quot; under 1999/45/EC.</td>
</tr>
<tr>
<td>Explosive Properties:</td>
<td>None</td>
</tr>
<tr>
<td>Oxidizing Properties:</td>
<td>None</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density:</td>
<td>Not available</td>
</tr>
<tr>
<td>Density / Specific Gravity:</td>
<td>1.04 - 1.10</td>
</tr>
<tr>
<td>Water Solubility:</td>
<td>Miscible</td>
</tr>
<tr>
<td>Fat Solubility:</td>
<td>Not available</td>
</tr>
<tr>
<td>Partition Coefficient (n-Octanol/Water):</td>
<td>Not available</td>
</tr>
<tr>
<td>Percent Volatile (%):</td>
<td>65 - 85</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity (mPa s):</td>
<td>1.5 - 2.1</td>
</tr>
</tbody>
</table>

### SECTION 10 STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability:</td>
<td>Stable</td>
</tr>
<tr>
<td>Conditions to Avoid:</td>
<td>None</td>
</tr>
<tr>
<td>Materials to Avoid:</td>
<td>Acids, bases, oxidizing materials and reducing agents</td>
</tr>
<tr>
<td>Hazardous Decomposition Products:</td>
<td>CO, CO₂, NOx and Ammonia</td>
</tr>
<tr>
<td>Hazardous Polymerization:</td>
<td>May Occur</td>
</tr>
<tr>
<td>Conditions to Avoid:</td>
<td>None</td>
</tr>
<tr>
<td>Stability:</td>
<td>Stable</td>
</tr>
<tr>
<td>Conditions to Avoid:</td>
<td>None</td>
</tr>
</tbody>
</table>

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SECTION 11  TOXICOLOGICAL INFORMATION

Acute Toxicity:

Inhalation:
Not available

Ingestion:
Not available

Eye:
Minimal irritant, Maximum Group Mean Score = 2.7, Class 3 (rabbit)
OECD Guidelines No.405 (1987)
92/69/EEC Method B5

Skin:
Non irritant, Primary Irritation Index = 0.0 (rabbit)
OECD Guidelines No.404 (1992)
92/69/EEC Method B5

Sensitization:
Non sensitizer, Sensitization rate = 0 % (0/10) (guinea pig)
96/54/EC Method B6

Mutagenicity:
Ames test : Negative (test strains: S.typhimurium)

Reproductive Toxicity:
Not available

Carcinogenicity:
Not available

Others:
Not available
SECTION 12 ECOLOGICAL INFORMATION

Mobility: Not available
Persistence / Degradability: Not available
Bioaccumulation: Not available
Ecotoxicity: Not available
Other Adverse Effects: Not available

SECTION 13 DISPOSAL CONSIDERATION

Method of Disposal:
Disposal should be subject to federal, state and local laws.

SECTION 14 TRANSPORT INFORMATION

UN #: None
UN Shipping Name: None
UN Classification: None
UN Packing Group: None
Marine Pollutant: Yes
Chemical name (wt%):
No

Special Precautions: None

SECTION 15 REGULATORY INFORMATION

Information on the Label:
Symbol & Indication: Not required
R-Phrase: Not required
S-Phrase: Not required
Dangerous Component(s):
None
Special Precautions under 1999/45/EC Annex V:
Not required

Specific Provisions in Relation to Protection of Man or the Environment:
76/769/EEC: Not regulated
(EC)2037/2000: Not regulated
(EC)304/2003: Not regulated
Others: None

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< USA Information >

Information on the Label under FHSA:

Signal Word: Not required

Hazard warning: Not required

Safety Advice: Not required

Hazardous Component(s):
None

SARA Title III §313:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Ethylene glycol&quot; (107-21-1)</td>
<td>2 - 6</td>
</tr>
</tbody>
</table>

California Proposition 65:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

< Revised information from the previous version>
Entirely revised.

< Canada Information >

WHMIS Controlled Product: Not applicable (Manufactured article)

< Australia Information >

Statement of Hazardous Nature: Not classified as hazardous according to criteria of NOHSC.

SECTION 16 OTHER INFORMATION

<R phrase list>
R11 : Highly flammable.
R22 : Harmful if swallowed.
R36 : Irritating to eyes.
R67 : Vapours may cause drowsiness and dizziness.

<Revised information from the previous version>
Entirely revised.

Date of Issue: February 6, 1995
Revised: July 15, 2003
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