1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: 8103 RED INK
Product Number: 201-8123
REACH Registration Number: N/A
Identified Use: Marking ink for semiconductor
Uses Advised Against: None identified
Manufacturer: Xandex, Inc.
1360 Redwood Way, Suite A
Petaluma, CA 94954 USA
Web Site: www.xandex.com
E-Mail: beastin@xandex.com
Information Contact: Bill Eastin
Emergency Telephone: (800) 535-5053 (US Domestic)
(352) 323-3500 (International)

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect, Irritant, Harmful by ingestion, Harmful by skin absorption

Target Organs
Central nervous system

GHS Classification
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Skin irritation (Category 2)
Acute aquatic toxicity (Category 2)

GHS Label elements, including precautionary statements
Pictogram

Signal Word
Warning

Hazard statements
H302 + H312 Harmful if swallowed or in contact with skin
H315 Causes skin irritation
H332 Harmful if inhaled
H401 Toxic to aquatic life
Precautionary statements
P280  Wear protective gloves

NFPA Rating
Health hazard  2
Fire  1
Reactivity hazard  1

HMIS Classification
Health hazard  2
Flammability  1
Physical hazard  1

Potential Health Effects
Eyes: Causes eye irritation.
Skin: Harmful if absorbed through skin. Causes skin irritation.
Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion: Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Description
Phenoxy resin and dye based ink mixture.

Hazardous Ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>EC-No</th>
<th>Index-No</th>
<th>CAS-No</th>
<th>Amount (%)</th>
<th>Classification according to Regulation (EC) No 1272/2008 (CLP)</th>
<th>Classification according to 67/548/EEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzyl Alcohol</td>
<td>202-859-9</td>
<td>603-057-00-5</td>
<td>100-51-6</td>
<td>60-90</td>
<td>H302 + 312, H315, H332, H401, P280</td>
<td>R20/22, Xn</td>
</tr>
<tr>
<td>Solvent Red 229</td>
<td></td>
<td></td>
<td></td>
<td>1-10</td>
<td>H316, H320, P280</td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

In case of eye contact:
Flush eyes with water as a precaution.

In case of skin contact:
Wash with soap and plenty of water.

In case of inhalation:
If breathed in, remove person into fresh air.
In case of ingestion:
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:
Use water spray, dry chemical, CO₂, alcohol-resistant foam.

Hazardous combustion products:
Emits carbon oxides under fire conditions.

Special protective equipment for fire fighters:
Wear self-contained breathing apparatus if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions:
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up:
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling:
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Conditions for storage:
Store at a temperature of 10-25°C (50-77°F) to maintain maximum shelf life.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Limit value type (country of origin)</th>
<th>Substance name</th>
<th>EC-No</th>
<th>CAS-No</th>
<th>Occupational exposure limit value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA (USA)</td>
<td>Benzyl alcohol</td>
<td>202-859-9</td>
<td>100-51-6</td>
<td>10 ppm</td>
<td>Workplace Environmental Exposure Levels (WEEL)</td>
</tr>
<tr>
<td>TWA (USA)</td>
<td>Solvent Red 229</td>
<td></td>
<td></td>
<td>10 mg/m³ TWA Total dust 5 mg/m³ Respirable</td>
<td>ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

**Personal protective equipment**

**Eye protection**
Safety goggles

**Respiratory protection**
For continuous exposure to large quantities, wear respirator (CEN/NIOSH approved) as required for concentrations of air contaminants encountered.

**Skin protection**
Chemical resistant gloves. Avoid repeated or prolonged skin exposure.

**Hygiene measures**
Wash hands thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Physical State:** Opaque liquid
- **Color:** Red
- **Odor:** Slight alcoholic odor
- **Flash Point:** 96°C
- **Specific Gravity:** 1.081 (Water = 1)
- **% Volatile/Non-Volatile (Solids):** 84% Volatile / 16% Non-Volatile

10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable under recommended storage conditions
**Conditions to Avoid:** A mixture of benzyl alcohol and 58% sulfuric acid decomposed violently when heated to 180°C. Benzyl alcohol containing 1.4% hydrogen bromide and 1.1% of an iron(II) salt polymerized exothermally when heated above 100°C.

**Hazardous Decomposition Products:** Carbon oxides
**Materials to Avoid:** Strong oxidizing agents
11. TOXICOLOGICAL INFORMATION

Acute toxicity

Benzyl alcohol

Oral LD50
LD50 Oral-rat-1,230 mg/kg

Inhalation LC50
No data available

Dermal LD50
LD50 Dermal-rabbit-2,000 mg/kg

Solvent Red 229

Oral LD50
LD50 Oral-rat->3,000 mg/kg

Skin corrosion/irritation

Benzyl alcohol
Skin-rabbit-irritating to skin-24h

Solvent Red 229
No data available

Serious eye damage / eye irritation

Benzyl alcohol
No data available

Solvent Red 229
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH.
NTP: No component of this product at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by NTP.

OSHA: No component of this product at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by OSHA

Reproductive toxicity
No data available

Teratogenicity
No data available

Specific target organ toxicity- single exposure (Globally Harmonized System)
No data available

Specific target organ toxicity- repeated exposure (Globally Harmonized System)
No data available

Aspiration hazard
No data available

Potential health effects
- **Ingestion**
  Harmful if swallowed.
- **Inhalation**
  May be harmful if inhaled. Causes respiratory tract irritation.
- **Skin**
  Harmful if absorbed through skin. Causes skin irritation.
- **Eyes**
  Causes eye irritation.

Signs and Symptoms of Exposure
Central nervous system depression.

Synergistic effects
No data available

### 12. ECOLOGICAL INFORMATION

**Toxicity**

**Benzyl alcohol**
- Toxicity to fish
  LC50- *Lepomis macrochirus* (Bluegill)- 10 mg /l – 96 h
- Toxicity to daphnia and other aquatic invertebrates
  EC50- *Daphnia magna* (Water Flea)- 55 mg /l – 24 h
Persistance and degradability
Benzyl alcohol
  Biodegradability
    Biotic/Aerobic
      Result: 92-96% - Readily biodegradable

Bioaccumulative potential
No data available

Mobility in soil
No data available

PBT and vPvB assessment
No data available

Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Contact a professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations in the jurisdiction where the product is used.

14. TRANSPORT INFORMATION

DOT (US)
  UN Number: N/A
  Marine pollutant: No
  Poison inhalation hazard: No
  Not dangerous goods

IATA
  UN Number: N/A
  Not dangerous goods

IMDG
  Not dangerous goods.

15. REGULATORY INFORMATION

OSHA Hazards
  Target Organ Effect, Harmful by ingestion, Harmful by skin absorption, Irritant

CERCLA Status:
  Not listed
TSCA Status:
All chemicals used in this product are TSCA listed.

SARA 302:
This product contains no chemicals subject to the notification under SARA Title III, Section 302.

SARA 311/312 Hazards
Acute health hazard, chronic health hazard.

SARA 313:
This product contains no chemicals subject to the notification under SARA Title III, Section 313.

Massachusetts Right To Know Components

<table>
<thead>
<tr>
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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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German Regulations
Water-endangering substances (WGK [water hazard class]): 1

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Xandex Incorporated shall not be held liable for any damage resulting from handling or from contact with the above product.

Version 3.4
Revision Date: 11/29/17
Print Date: 11/29/17
Replaces: Version 3.3 Dated 11/04/16