
1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: 8104 BLACK INK
Product Number: 201-1631
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

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable Liquids (Category 3) H226
Acute Toxicity, Oral (Category 4) H302
Acute Toxicity, Inhalation (Category 4) H332
Eye Irritation (Category 2A) H319
Acute Aquatic Toxicity (Category 2) H401

GHS Label elements, including precautionary statements

Pictogram



Signal Word

Warning

Hazard statements

H226	Flammable liquid and vapor
H302 + H332	Harmful if swallowed or inhaled
H315	Causes skin irritation
H319	Causes serious eye irritation
H401	Toxic to aquatic life

Precautionary statements

P261	Avoid breathing fume/gas/mist/vapors/spray
P280	Wear protective gloves



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P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

NFPA Rating

Health hazard	2
Fire	2
Reactivity hazard	0

HMIS Classification

Health hazard	2
Flammability	2
Physical hazard	0

Potential Health Effects

Eyes: This product can cause serious irritation to eyes on contact.
Skin: This product can cause moderate irritation to skin on contact.
Inhalation: Vapor or mist can cause irritation to the nose and throat.
Ingestion: Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Description

Phenoxy resin and dye based ink mixture with a blend of alcohols

Hazardous Ingredients

Chemical name	EC-No	CAS-No	Amount (%)	Classification
Benzyl Alcohol	202-859-9	100-51-6	40-60	Acute Tox. 4; Eye Irrit. 2A; Aquatic Acute 2; H302, H319, H401
Diacetone Alcohol	204-626-7	123-42-2	8-20	Flam. Liq. 3; Eye Irrit. 2A; H226, H319
Nigrosine Dye	616-851-1	8005-02-5	5-15	Self-heat. 2; Combustible Dust- USH01; H252
Ethyl-3-Ethoxypropionate	212-112-9	763-69-9	10-30	H226

4. FIRST AID MEASURES

In case of eye contact:

Thoroughly flush with water for at least 15 minutes. Consult a physician immediately.

In case of skin contact:

Wash with soap and plenty of water.



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In case of inhalation:

Remove person to 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

Conditions of flammability:

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media:

Use water spray, dry chemical, CO₂, alcohol-resistant foam.

Hazardous combustion products:

Emits carbon and nitrogen 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.

Methods for cleaning up:

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid contact with skin and eyes. Avoid inhalation of vapor, mist or gas. Remove all sources of ignition.

Conditions for storage:

Store at a temperature of 10-25°C (50-77° F) to maintain maximum shelf life.



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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Limit value type (country of origin)	Substance name	EC-No	CAS-No	Occupational exposure limit value	Source
TWA (USA)	Benzyl alcohol	202-859-9	100-51-6	10 ppm	Workplace Environmental Exposure Levels (WEEL)
TWA (USA)	Diacetone alcohol	204-626-7	123-42-2	50 ppm	ACGIH Threshold Limit Values (TLV)
TWA (USA)	Diacetone alcohol	204-626-7	123-42-2	50 ppm 240 mg/m ³	NIOSH Recommended Exposure Limits
TWA (USA)	Diacetone alcohol	204-626-7	123-42-2	50 ppm 240 mg/m ³	Occupational Exposure Limits (OSHA)- Table Z-1 Limits for Air Contaminants
TWA (USA)	Diacetone alcohol	204-626-7	123-42-2	50 ppm 240 mg/m ³	Occupational Exposure Limits (OSHA)- Table Z-1 Limits for Air Contaminants- 1910.1000

Individual Protection Measures

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

Appearance

Form

Opaque liquid

Color

Black

Safety Data

pH

No data available

Melting point/freezing point

No data available

Boiling point

114°C (ASTM D 1120M)

Odor

Slight alcoholic odor

Odor threshold

No data available

Flash point

44° C (Open Cup)



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	63° C (Closed cup, ASTM D 93)
Ignition temperature	No data available
Auto-ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor pressure	No data available
Water solubility	No data available
Specific gravity	1.067 (Water = 1)
% Volatile/Non-Volatile (Solids)	78% Volatile / 22% Non-Volatile
Partition coefficient	No data available
Relative vapor density	No data available
Evaporation rate	No data available

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable under recommended storage conditions
Conditions to Avoid:	Heat and flame
Hazardous Decomposition Products:	Carbon and nitrogen oxides
Materials to Avoid:	Strong oxidizing agents, strong bases

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Benzyl alcohol

Oral LD50

LD50 Oral-rat-male-1,620 mg/kg (ECHA)

Diacetone alcohol

Oral LD50

LD50 Oral-rat-2,520 mg/kg

Inhalation LC50

LC50 Inhalation-rat-4 hr->10 mg/l

Dermal LD50

LD50 Dermal-rabbit-13,500 mg/kg

Ethyl-3-Ethoxypropionate

Oral LD50

LD50 Oral-rat-male- >5,000 mg/kg (OECD Test Guideline 401)

LD50 Oral-rat-female- 4,309 mg/kg (OECD Test Guideline 401)

Inhalation LC50

LC50 Inhalation-rat- male-6 h- >998 ppm (OECD Test Guideline 403)



Dermal LD50

LD50 Dermal-rabbit- male- 4,080 mg/kg (OECD Test Guideline 402)

LD50 Dermal-rabbit-female- 4,680 mg/kg (OECD Test Guideline 402)

Skin corrosion/irritation

Benzyl alcohol

Skin - Rabbit

Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Diacetone alcohol

No data available

Ethyl-3-Ethoxypropionate

Skin - Rabbit

Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage / eye irritation

Benzyl alcohol

Eyes - Rabbit

Result: irritating
(OECD Test Guideline 405)

Diacetone alcohol

Eyes-rabbit-Severe eye irritation-24 h

Ethyl-3-Ethoxypropionate

Eyes - Rabbit

Result: No eye irritation - 24 h
(OECD Test Guideline 405)

Respiratory or skin sensitization

Benzyl Alcohol

Maximization Test

Result: negative
(OECD Test Guideline 406)

Diacetone alcohol

No data available

Ethyl-3-Ethoxypropionate

Guinea pig

Result: Does not cause skin sensitization.



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(OECD Test Guideline 406)

Germ Cell Mutagenicity

Benzyl Alcohol

No data available

Diacetone alcohol

No data available

Ethyl-3-Ethoxypropionate

S. typhimurium

Result: negative

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

Synergistic effects

No data available

Potential health effects

Ingestion

Harmful if swallowed.



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Inhalation	May be harmful if inhaled.
Skin	Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure

Central nervous system depression. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness, blood disorders, dermatitis and blurred vision. The chemical, physical, and toxicological properties of this product have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

Toxicity

Benzyl alcohol

Toxicity to fish	Static test LC50- Pimephales promelas (Fathead minnow)- 460 mg /l – 96 h (US-EPA)
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50- Daphnia magna (Water flea)- 230 mg /l – 48 h (OECD Test Guideline 202)
Toxicity to algae	Static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 700 mg/l – 72 h (OECD Test Guideline 201)

Diacetone alcohol

Toxicity to fish	LC50- Lepomis macrochirus (Bluegill)- 420 mg /l – 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50- Daphnia magna (Water Flea)- 9,000 mg /l – 24 h

Ethyl-3-Ethoxypropionate

Toxicity to fish	Static test LC50- Pimephales promelas (Fathead Minnow)- 45.3 mg /l- 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50- Daphnia magna (Water Flea)- 785 mg/l – 48 (OECD Test Guideline 204)
Toxicity to algae	Growth inhibition EC50- Selenastrum capricomutum (Green Algae) >115 mg/l – 72 h (OECD Test Guideline 201)
Toxicity to bacteria	Growth inhibition IC50 - other microorganisms > 5,000 mg/l - 16 h



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Persistence and degradability

Benzyl alcohol

Biodegradability	aerobic - Exposure time 14 d Result: 92 - 96 % - Readily biodegradable. (OECD Test Guideline 301C) aerobic - Exposure time 21 d Result: 95 - 97 % - Readily biodegradable. (OECD Test Guideline 301A)
Biochemical Oxygen Demand (BOD)	1,550 mg/g
Theoretical oxygen demand	2,515 mg/g (IUCLID)
Ratio BOD/ThBOD	62 %

Diacetone alcohol

No data available

Ethyl-3-Ethoxypropionate

No data available

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:	1210, Printing Ink, Flammable	Packing Group III
Poison inhalation hazard:	No	



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Not dangerous goods

IATA

UN Number: 1210, Printing Ink, Flammable Packing Group III
Not dangerous goods

IMDG

UN Number: 1210, Printing Ink, Flammable Packing Group III
Not dangerous goods.

15. REGULATORY INFORMATION

OSHA Hazards

Combustible Liquid, Target Organ Effect, Harmful by Ingestion or Inhalation, 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

	CAS No.
Benzyl Alcohol	100-51-6
Diacetone Alcohol	123-42-2

Pennsylvania Right To Know Components

	CAS No.
Benzyl Alcohol	100-51-6
Diacetone Alcohol	123-42-2
Ethyl-3-Ethoxypropionate	763-69-9

New Jersey Right To Know Components

	CAS No.
Benzyl Alcohol	100-51-6
Diacetone Alcohol	123-42-2
Ethyl-3-Ethoxypropionate	763-69-9



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California Prop. 65 Components

	CAS No.
Aniline	62-53-3

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.

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