



8104 Black Ink

Safety Data Sheet
905-0004-01 Revision C

according to US HazCom 2012
Issue date: 25 July 2022 Revision date: 26 September 2022 Supersedes: 25 July 2022

SECTION 1: Identification

1.1. Identification

Product form : Mixtures
Trade name : 8104 Black Ink
Product code : 201-1631

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Marking ink for semiconductor industry

1.3. Supplier

Xandex Inc.
1360 Redwood Way, Suite A
Petaluma, CA 94954 USA

T: +1 707-763-7799
www.xandex.com
beastin@xandex.com

1.4. Emergency telephone number

Emergency number : (800) 535-5053 (US Domestic); +1-352-323-3500 (International)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 3	Flammable liquid and vapor
Acute toxicity (oral) Category 4	Harmful if swallowed
Acute toxicity (inhalation:dust,mist) Category 4	Harmful if inhaled
Serious eye damage/eye irritation Category 2A	Causes serious eye irritation
Reproductive toxicity Category 2	Suspected of damaging fertility or the unborn child
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	May cause respiratory irritation

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Warning

Hazard statements (GHS US) :

Flammable liquid and vapor
Harmful if swallowed or if inhaled
Causes serious eye irritation
May cause respiratory irritation
Suspected of damaging fertility or the unborn child

Precautionary statements (GHS US) :

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.

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Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing mist, spray, vapors.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear eye protection, protective gloves, protective clothing.
If swallowed: Call a poison center or doctor if you feel unwell.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If exposed or concerned: Get medical advice/attention.
Rinse mouth.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use foam, carbon dioxide (CO₂), dry extinguishing powder, Water spray or fog, sand to extinguish.
Store in a well-ventilated place. Keep container tightly closed.
Keep cool.
Store locked up.
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Benzyl alcohol	CAS-No.: 100-51-6	40 – 60	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332
Ethyl 3-ethoxypropanoate	CAS-No.: 763-69-9	10 – 30	Flam. Liq. 3, H226
Diacetone alcohol	CAS-No.: 123-42-2	8 – 20	Flam. Liq. 3, H226 Eye Irrit. 2A, H319 Repr. 2, H361 STOT SE 3, H335
C.I. Solvent Black 7	CAS-No.: 8005-02-5	5 – 15	Comb. Dust

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

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First-aid measures after inhalation	: Remove person to fresh air and keep at rest in a position comfortable for breathing. Allow the victim to rest. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact	: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER or doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects	: Suspected of damaging fertility or the unborn child.
Symptoms/effects after inhalation	: Harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard	: Flammable liquid and vapor. During a fire, carbon oxides (CO, CO ₂) and nitrogen oxides combustion products may be formed.
Explosion hazard	: Vapors are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapors.
Hazardous decomposition products in case of fire	: Thermal decomposition can lead to the release of irritating gases and vapors.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Take precautionary measures to prevent the formation of static electricity. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid breathing mist, spray, vapors. Avoid contact with skin, eyes and clothing.
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6.1.1. For non-emergency personnel

Protective equipment	: Wear recommended personal protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Ventilate area. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
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Emergency procedures : Ventilate area. Stop leak if safe to do so. Eliminate ignition sources.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage. Take up liquid spill into inert absorbent material.
Methods for cleaning up : Remove all sources of ignition. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Use only non-sparking tools. Store away from other materials.
Other information : Dispose in a safe manner in accordance with local/national regulations.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For disposal of residues refer to section 13 : "Disposal considerations".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Heavier than air, vapors may travel long distances along ground, ignite and flash back to source.
Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ensure adequate ventilation. Use only outdoors or in a well-ventilated area. Avoid contact with skin, eyes and clothing. Avoid breathing mist, spray, vapors. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Wear recommended personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge.
Storage conditions : Keep container tightly closed in a cool, well-ventilated place. Keep container closed when not in use. Store locked up.
Incompatible materials : Strong oxidizing agents. Strong bases.
Storage temperature : 10 – 25 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8104 Black Ink	
No additional information available	
Benzyl alcohol (100-51-6)	
USA - AIHA - Occupational Exposure Limits	
WEEL TWA [ppm]	10 ppm
C.I. Solvent Black 7 (8005-02-5)	
No additional information available	

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Ethyl 3-ethoxypropanoate (763-69-9)	
No additional information available	
Diacetone alcohol (123-42-2)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Diacetone alcohol
ACGIH OEL TWA [ppm]	50 ppm
Remark (ACGIH)	TLV® Basis: URT & eye irr
Regulatory reference	ACGIH 2022
USA - OSHA - Occupational Exposure Limits	
Local name	Diacetone alcohol (4-Hydroxy-4-methyl-2-pentanone)
OSHA PEL (TWA) [1]	240 mg/m ³
OSHA PEL (TWA) [2]	50 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - IDLH - Occupational Exposure Limits	
IDLH [ppm]	1800 ppm (10% LEL)
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL (TWA)	240 mg/m ³
NIOSH REL TWA [ppm]	50 ppm

8.2. Appropriate engineering controls

Appropriate engineering controls	: Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Wear suitable gloves resistant to chemical penetration. Please follow the instructions related to the permeability and the penetration time provided by the manufacturer

Eye protection:

Chemical goggles or safety glasses

Skin and body protection:

Long sleeved protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. An approved organic vapor respirator/supplied air or self-contained breathing apparatus must be used when vapor concentration exceeds applicable exposure limits

Other information:

Do not eat, drink or smoke during use.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Opaque.
Color	: Black
Odor	: alcoholic
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 114 °C (237.2 °F)
Flash point	: 44 °C (111.2 °F)
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 1.067
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

Volatility	: 78 %
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SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapor. Heavier than air, vapors may travel long distances along ground, ignite and flash back to source.

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

Strong oxidizing agents. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition may produce : Carbon oxides (CO, CO₂). Nitrogen oxides.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Harmful if inhaled.

8104 Black Ink	
ATE US (oral)	788 mg/kg body weight
ATE US (dust, mist)	2.5 mg/l/4h

Benzyl alcohol (100-51-6)	
LD50 oral rat	1230 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 Inhalation - Rat	> 4178 mg/m ³ (Exposure time: 4 h)

C.I. Solvent Black 7 (8005-02-5)	
LD50 oral rat	> 2000 mg/kg

Ethyl 3-ethoxypropanoate (763-69-9)	
LD50 oral rat	4309
LD50 dermal rabbit	4080 – 4680
LC50 Inhalation - Rat	> 5.96 mg/l (Exposure time: 6 h)
LC50 Inhalation - Rat [ppm]	>998 ppm/6h

Diacetone alcohol (123-42-2)	
LD50 oral rat	> 4 g/kg
LD50 dermal rabbit	13630 mg/kg
LC50 Inhalation - Rat	> 7.23 g/m ³ (Exposure time: 8 h)

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity : Suspected of damaging fertility or the unborn child.
STOT-single exposure : May cause respiratory irritation.

Diacetone alcohol (123-42-2)	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)

Benzyl alcohol (100-51-6)	
NOAEL (oral,rat,90 days)	400 mg/kg body weight Animal: rat, Guideline: other:OECD Guideline 451 (Carcinogenicity Studies)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)
Viscosity, kinematic : No data available
Symptoms/effects : Suspected of damaging fertility or the unborn child.
Symptoms/effects after inhalation : Harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after eye contact : Causes serious eye irritation.

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Symptoms/effects after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.
Other information	: Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Benzyl alcohol (100-51-6)	
LC50 - Fish [1]	460 mg/l
EC50 - Crustacea [1]	230 mg/l Test organisms (species): Daphnia magna
EC50 - Other aquatic organisms [1]	230 mg/l waterflea
LC50 - Fish [2]	(Exposure time: 96 h - Species: Lepomis macrochirus [static])
EC50 - Other aquatic organisms [2]	500 mg/l
EC50 72h - Algae [1]	770 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	500 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
NOEC (chronic)	51 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	48897 mg/l Test organisms (species): other: Duration: '30 d'
NOEC chronic crustacea	51 mg/l
Ethyl 3-ethoxypropanoate (763-69-9)	
LC50 - Fish [1]	62 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 - Crustacea [1]	970 mg/l (Exposure time: 48 h - Species: Daphnia magna)
Diacetone alcohol (123-42-2)	
LC50 - Fish [1]	420 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
LC50 - Fish [2]	420 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)
12.2. Persistence and degradability	
8104 Black Ink	
Persistence and degradability	Not established.
12.3. Bioaccumulative potential	
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Bioaccumulative potential	Not established.
Benzyl alcohol (100-51-6)	
Partition coefficient n-octanol/water (Log Pow)	1.1
Ethyl 3-ethoxypropanoate (763-69-9)	
Partition coefficient n-octanol/water (Log Pow)	1.47 (at pH 6.3)
Diacetone alcohol (123-42-2)	
Partition coefficient n-octanol/water (Log Pow)	1.03

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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations





13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, national regulation.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
1210	UN1210	1210	1210
14.2. Proper Shipping Name			
Printing ink	PRINTING INK	PRINTING INK	Printing ink
14.3. Transport hazard class(es)			
3	3	3	3
			
14.4. Packing group			
III	III	III	III
14.5. Environmental hazards			
Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No
Consult the associated transport regulations for available and applicable exceptions or exemptions.			

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

No additional information available

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EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

according to US HazCom 2012

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Revision date : 26 September 2022

Other information : None.

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.