NAZDAR
INK TECHNOLOGIES

SAFETY DATA SHEET

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1. IDENTIFICATION

Product identifier

Product code **RE183**

Product name **Retarder**

Product category **Ink Product**

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Industrial Printing Operations

Details of the supplier of the safety data sheet

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24 Hour Emergency Phone Number

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Inhalation (Vapors)	Category 4 - (H332)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)

Label elements

Signal word
Warning

Hazard statements
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled

Precautionary Statements
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves and eye/face protection
P312 - Call a POISON CENTER or doctor if you feel unwell

Hazards not otherwise classified (HNOC)

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	CAS No	Weight-%	Trade secret	Note
2-Butoxyethanol	111-76-2	30 - 60	*	
Ethylene glycol monobutyl ether acetate	112-07-2	30 - 60	*	

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

Description of first aid measures

General Advice Show this safety data sheet to the doctor in attendance.

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 if irritation develops and persists.

Skin Contact Wash off immediately with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation (redness, rash, blistering) develops, get medical attention.

Inhalation If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately. Remove person to fresh air and keep comfortable for breathing.

Ingestion Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed

None under normal use conditions.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water spray. Carbon dioxide (CO2). Foam. Dry chemical. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. May emit toxic fumes under fire conditions.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Sealed containers may rupture when heated. Cool containers / tanks with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Evacuate personnel to safe areas. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid contact with eyes, skin and clothing. Ventilate the area. Avoid breathing dust or vapor.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Keep out of drains, sewers, ditches and waterways.

Methods and material for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Use clean non-sparking tools to collect absorbed material.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Use personal protective equipment as required.

Conditions for safe storage, including any incompatibilities

Storage Keep away from open flames, hot surfaces and sources of ignition. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use.

Incompatible Products Strong oxidizing agents. Strong acids. Strong bases. Reducing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

Chemical name	ACGIH TLV
2-Butoxyethanol 111-76-2	TWA: 20 ppm
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm

Chemical name	OSHA PEL
2-Butoxyethanol 111-76-2	TWA: 50 ppm TWA: 240 mg/m^3 Skin

Chemical name	OSHA PEL (vacated)
2-Butoxyethanol 111-76-2	TWA: 25 ppm TWA: 120 mg/m^3 Skin

Chemical name	Ontario TWAEV
2-Butoxyethanol 111-76-2	TWA: 20 ppm
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm

Chemical name	Mexico OEL (TWA)
2-Butoxyethanol 111-76-2	TWA/VLE-PPT: 20 ppm
Ethylene glycol monobutyl ether acetate 112-07-2	TWA/VLE-PPT: 20 ppm

Appropriate engineering controls

Engineering Measures In case of insufficient ventilation, wear suitable respiratory equipment. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Users are advised to consider national Occupational Exposure Limits or other equivalent values.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles). Ensure that eyewash stations and safety showers are close to the workstation location. If splashes are likely to occur:. Wear suitable face shield.

Skin Protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Hand Protection Chemical resistant protective gloves.
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding >480 minutes of permeation time): eg. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers. Taking into account the varying conditions, the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Due to different glove types, the manufacturer's directions for use should be observed. Replace gloves immediately when torn or any change in appearance is noticed such as dimension, color, flexibility.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Avoid contact with eyes, skin and clothing. Wear suitable gloves and eye/face protection. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before eating, drinking or smoking. Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	**Appearance**	Water-white
Odor	Characteristic	**Odor Threshold**	No information available

Property	**Values**	**Remarks • Method**
pH		No data available
Melting Point / Freezing Point	No information available	No data available
Boiling Point / Boiling Range	> 149 °C / 300 °F	
Flash Point	66 °C / 150 °F	Tag closed cup
Evaporation rate		No data available
Flammability Limit in Air		
Upper flammability limit		No data available
Lower flammability limit		No data available
Vapor Pressure		No data available
Vapor Density		No data available
Specific Gravity	0.92	
Water Solubility		No data available
Solubility in other solvents		No data available
Partition coefficient: n-octanol/water		No data available
Autoignition Temperature	No information available	No data available
Hyphen		No data available
Kinematic viscosity		No data available

Dynamic viscosity No data available

Explosive Properties No data available
Oxidizing Properties No data available

Other information

Photochemically Reactive No
Weight Per Gallon (lbs/gal) 7.68

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
100	100	7.69	921.11

10. STABILITY AND REACTIVITY

Reactivity
No information available.

Chemical stability
Stable under normal conditions.

Possibility of hazardous reactions
None under normal processing.

Conditions to avoid
Keep away from open flames, hot surfaces and sources of ignition.

Incompatible materials
Strong oxidizing agents. Strong acids. Strong bases. Reducing agent.

Hazardous decomposition products
Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide. Carbon dioxide (CO2).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Specific test data for the substance or mixture is not available. Harmful if inhaled. (based on components).
Eye Contact Specific test data for the substance or mixture is not available.
Skin Contact Specific test data for the substance or mixture is not available.
Ingestion Specific test data for the substance or mixture is not available.

Chemical name	Oral LD50
2-Butoxyethanol 111-76-2	= 470 mg/kg (Rat)
Ethylene glycol monobutyl ether acetate 112-07-2	= 2400 mg/kg (Rat)

Chemical name	Dermal LD50
2-Butoxyethanol 111-76-2	= 435 mg/kg (Rabbit)
Ethylene glycol monobutyl ether acetate 112-07-2	= 1500 mg/kg (Rabbit)

Chemical name	Inhalation LC50
2-Butoxyethanol 111-76-2	= 450 ppm (Rat) 4 h = 486 ppm (Rat) 4 h
Ethylene glycol monobutyl ether acetate 112-07-2	> 400 ppm (Rat) 4 h

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Specific test data for the substance or mixture is not available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Specific test data for the substance or mixture is not available. Causes skin irritation (pain, redness and swelling). (based on components).
Eye damage/irritation Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components).
Irritation Specific test data for the substance or mixture is not available.
Corrosivity Specific test data for the substance or mixture is not available.
Sensitization Specific test data for the substance or mixture is not available.
Mutagenic Effects Specific test data for the substance or mixture is not available.
Carcinogenic effects Specific test data for the substance or mixture is not available.
Reproductive Effects Specific test data for the substance or mixture is not available.
STOT - single exposure Specific test data for the substance or mixture is not available.
STOT - repeated exposure Specific test data for the substance or mixture is not available.
Chronic Toxicity Specific test data for the substance or mixture is not available
Aspiration hazard Specific test data for the substance or mixture is not available.
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH
2-Butoxyethanol 111-76-2	A3
Ethylene glycol monobutyl ether acetate 112-07-2	A3

Numerical measures of toxicity - Product Information

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 2,400.00 mg/kg
ATEmix (dermal) 3,000.00 mg/kg
ATEmix (inhalation-dust/mist) 1.50 mg/l
ATEmix (inhalation-vapor) 11.00 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Specific test data for the substance or mixture is not available.

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants
Ethylene glycol monobutyl ether acetate 112-07-2	72h EC50 Desmodesmus subspicatus: > 500 mg/L

Chemical name	Fish
Ethylene glycol monobutyl ether acetate 112-07-2	96h LC50 Oncorhynchus mykiss: 20 - 40 mg/L
2-Butoxyethanol 111-76-2	96h LC50 Lepomis macrochirus: = 1490 mg/L (static) 96h LC50 Lepomis macrochirus: = 2950 mg/L

Chemical name	Crustacea
Ethylene glycol monobutyl ether acetate 112-07-2	48h EC50 Daphnia magna: = 37 mg/L
2-Butoxyethanol 111-76-2	48h EC50 Daphnia magna: > 1000 mg/L

Persistence and Degradability
No information available.

Bioaccumulation

Chemical name	Partition coefficient
2-Butoxyethanol 111-76-2	0.81
Ethylene glycol monobutyl ether acetate 112-07-2	1.51

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Methods Contain and dispose of waste according to local regulations.

Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

Note: This information is not intended to convey all specific transportation requirements relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation information can be found in the specific regulations for your mode of transportation. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

DOT Not regulated

ICAO / IATA / IMDG / IMO Not Regulated

15. REGULATORY INFORMATION

International Inventories
For further information, please contact:. All components are listed on the TSCA Inventory. Supplier (manufacturer/importer/downstream user/distributor).

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.

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
2-Butoxyethanol	111-76-2	30 - 60	1.0
Ethylene glycol monobutyl ether acetate	112-07-2	30 - 60	1.0

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:.

Chemical name	CAS No	Weight-%
Ethylene glycol monobutyl ether acetate	112-07-2	30 - 60

US State Regulations

Chemical name	Massachusetts
2-Butoxyethanol 111-76-2	X

Chemical name	Minnesota Right To Know
2-Butoxyethanol 111-76-2	X

Chemical name	New Jersey
2-Butoxyethanol 111-76-2	X
Ethylene glycol monobutyl ether acetate 112-07-2	X

Chemical name	Pennsylvania
2-Butoxyethanol 111-76-2	X
Ethylene glycol monobutyl ether acetate 112-07-2	X

California Proposition 65

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects

Canada

Chemical name	NPRI - National Pollutant Release Inventory
2-Butoxyethanol 111-76-2	Part 1, Group A Substance; Part 5, Individual Substances Part 4 Substance (as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999)
Ethylene glycol monobutyl ether acetate 112-07-2	Part 5, Other Groups and Mixtures (total of CAS 112-07-2, CAS 112-15-2, CAS 112-25-4, CAS 112-34-5, CAS 5131-66-8, CAS 107-98-2, CAS 109-59-1, CAS 111-90-0, CAS 124-17-4, CAS 1569-01-3, CAS 1569-02-4, CAS 2807-30-9, CAS 29911-27-1, CAS 29911-28-2, CAS 34590-94-8, CAS 54839-24-6, CAS 623-84-7, CAS 88917-22-0 and their isomers, listed under Other Glycol ethers and acetates (and their isomers)) Part 4 Substance (as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999)

16. OTHER INFORMATION

HMIS	Health hazards	Flammability	Reactivity	Personal Protection
	2 *	2	0	X

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)
STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
Group 3 - Not Classifiable as to Carcinogenicity in Humans

NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated to be a Human Carcinogen
OSHA: (Occupational Safety & Health Administration)
X - Present

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Pursuant to NOM-018-STPS-2015
This information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet