SAFETY DATA SHEET

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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product code **RE212**

Product name **Thinner**

Product category **Ink Product**

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Printing operations

Details of the supplier of the safety data sheet

UNITED STATES
Nazdar Company
8501 Hedge Lane Terrace
Shawnee, KS 66227
Tel: +001-913-422-1888
Tel: +001-800-677-4657
Fax: +001-913-422-2294
www.nazdar.com

UNITED KINGDOM
Nazdar Limited
Barton Road
Heaton Mersey
Stockport, England SK4 3EG
Tel: +44 161 442 2111

Emergency telephone number

USA: Chemtrec: +001-800-424-9300
Outside USA: Chemtrec: +001-703-527-3887
24 Hour Emergency Phone Number

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Dermal	Category 4 - (H312)
Skin Corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Flammable liquids	Category 3 - (H226)

Label elements

Signal Word
Warning

Hazard Statements
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H226 - Flammable liquid and vapor

Precautionary Statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P233 - Keep container tightly closed
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P403 + P235 - Store in a well-ventilated place. Keep cool
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Hazards not otherwise classified (HNOC)
No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Component	CAS-No	Weight %	Trade Secret	Note
Ethylene glycol monopropyl ether	2807-30-9	30 - 60	*	
Diethylene glycol monobutyl ether	112-34-5	10 - 30	*	
2-Butoxyethanol	111-76-2	5 - 10	*	
Isopropyl alcohol	67-63-0	1 - 5	*	
p-Toluenesulfonic acid	104-15-4	1 - 5	*	

*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 Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.
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
Foam. Carbon dioxide (CO2). Dry chemical. Water spray. 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. Cool containers / tanks with water spray. Sealed containers may rupture when heated.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

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

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

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

Conditions for safe storage, including any incompatibilities

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

Component	ACGIH TLV
Diethylene glycol monobutyl ether 112-34-5	TWA: 10 ppm inhalable fraction and vapor
2-Butoxyethanol 111-76-2	TWA: 20 ppm
Isopropyl alcohol 67-63-0	TWA: 200 ppm STEL: 400 ppm

Component	OSHA PEL
2-Butoxyethanol 111-76-2	TWA: 50 ppm TWA: 240 mg/m³ Skin
Isopropyl alcohol 67-63-0	TWA: 400 ppm TWA: 980 mg/m³

Component	OSHA PEL (vacated)
2-Butoxyethanol 111-76-2	TWA: 25 ppm TWA: 120 mg/m³ Skin
Isopropyl alcohol 67-63-0	TWA: 400 ppm TWA: 980 mg/m³

	STEL: 500 ppm STEL: 1225 mg/m³

Component	Ontario TWAEV
Ethylene glycol monopropyl ether 2807-30-9	TWA: 25 ppm TWA: 110 mg/m³ Skin
Diethylene glycol monobutyl ether 112-34-5	TWA: 10 ppm inhalable fraction and vapor
2-Butoxyethanol 111-76-2	TWA: 20 ppm
Isopropyl alcohol 67-63-0	TWA: 200 ppm STEL: 400 ppm

Component	Mexico OEL (TWA)
2-Butoxyethanol 111-76-2	TWA/VLE-PPT: 26 ppm TWA/VLE-PPT: 120 mg/m³ STEL/PPT-CT: 75 ppm STEL/PPT-CT: 360 mg/m³
Isopropyl alcohol 67-63-0	TWA/VLE-PPT: 400 ppm TWA/VLE-PPT: 980 mg/m³ STEL/PPT-CT: 500 ppm STEL/PPT-CT: 1225 mg/m³

Appropriate engineering controls

Engineering Measures 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. In case of insufficient ventilation, wear suitable respiratory equipment.

Individual protection measures, such as personal protective equipment

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

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. Wash hands before eating, drinking or smoking. Wash contaminated clothing before reuse. Avoid contact with eyes, skin and clothing. Wear suitable gloves and eye/face protection. Regular cleaning of equipment, work area and clothing is recommended.

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 data available
Boiling Point / Boiling Range	> 149 °C / 300 °F	
Flash Point	49 °C / 120 °F	Tag open cup (Minimum)
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	0.93	
Water Solubility		No data available
Solubility in other solvents		No data available
Partition coefficient: n-octanol/water		No data available
Autoignition Temperature		No data available
Decomposition temperature		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)	7.72

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
98	98.11	7.58	907.71

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

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

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

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

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. Harmful in contact with skin. (based on components).
Ingestion Specific test data for the substance or mixture is not available.

Component	Oral LD50
Ethylene glycol monopropyl ether 2807-30-9	= 3089 mg/kg (Rat)
Diethylene glycol monobutyl ether 112-34-5	= 5660 mg/kg (Rat)
2-Butoxyethanol 111-76-2	= 470 mg/kg (Rat)
Isopropyl alcohol 67-63-0	= 1870 mg/kg (Rat)
p-Toluenesulfonic acid 104-15-4	= 1410 mg/kg (Rat)

Component	Dermal LD50
Ethylene glycol monopropyl ether 2807-30-9	= 870 mg/kg (Rabbit)
Diethylene glycol monobutyl ether 112-34-5	= 2700 mg/kg (Rabbit)
2-Butoxyethanol 111-76-2	= 435 mg/kg (Rabbit)
Isopropyl alcohol 67-63-0	= 4059 mg/kg (Rabbit)

Component	Inhalation LC50
Ethylene glycol monopropyl ether 2807-30-9	= 1530 ppm (Rat) 7 h
2-Butoxyethanol 111-76-2	= 450 ppm (Rat) 4 h = 486 ppm (Rat) 4 h
Isopropyl alcohol 67-63-0	= 72600 mg/m³ (Rat) 4 h

Information on toxicological effects

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.

Component	ACGIH
2-Butoxyethanol 111-76-2	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)	5,650.00 mg/kg
ATEmix (dermal)	1,632.00 mg/kg mg/l
ATEmix (inhalation-dust/mist)	16.90 mg/l
ATEmix (inhalation-vapor)	124.00 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

Component	Algae/aquatic plants
Diethylene glycol monobutyl ether 112-34-5	96h EC50 Desmodesmus subspicatus: > 100 mg/L
Isopropyl alcohol 67-63-0	72h EC50 Desmodesmus subspicatus: > 1000 mg/L 96h EC50 Desmodesmus subspicatus: > 1000 mg/L

Component	Fish
Diethylene glycol monobutyl ether 112-34-5	96h LC50 Lepomis macrochirus: = 1300 mg/L (static)
2-Butoxyethanol 111-76-2	96h LC50 Lepomis macrochirus: = 2950 mg/L 96h LC50 Lepomis macrochirus: = 1490 mg/L (static)
Isopropyl alcohol 67-63-0	96h LC50 Pimephales promelas: = 9640 mg/L (flow-through) 96h LC50 Lepomis macrochirus: > 1400000 µg/L 96h LC50 Pimephales promelas: = 11130 mg/L (static)

Component	Crustacea
Diethylene glycol monobutyl ether 112-34-5	48h EC50 Daphnia magna: > 100 mg/L
2-Butoxyethanol 111-76-2	48h EC50 Daphnia magna: > 1000 mg/L
Isopropyl alcohol 67-63-0	48h EC50 Daphnia magna: = 13299 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Component	Partition coefficient
2-Butoxyethanol 111-76-2	0.81
Isopropyl alcohol 67-63-0	0.05
p-Toluenesulfonic acid 104-15-4	0.784

Other adverse effects

No information available

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

In the U.S. and Canada, this material may be reclassified as a combustible liquid and is not regulated, via surface transportation, in containers less than 119 gallons or 450 liters [per 49 CFR 173.150 (f)] [per Transportation of Dangerous Goods Regulations/Clear Language Part 1.33].

UN/ID no.	UN1210
Proper Shipping Name	Printing Ink Related Material
Hazard Class	3
Packing Group	III

ICAO / IATA / IMDG / IMO

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15. REGULATORY INFORMATION

International Inventories

All components are listed on the TSCA Inventory. For further information, please contact:. 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.

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Ethylene glycol monopropyl ether	2807-30-9	30 - 60	1.0
Diethylene glycol monobutyl ether	112-34-5	10 - 30	1.0
2-Butoxyethanol	111-76-2	5 - 10	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:.

Component	CAS-No	Weight %
Ethylene glycol monopropyl ether	2807-30-9	30 - 60
Diethylene glycol monobutyl ether	112-34-5	10 - 30

U.S. State Regulations

Component	Massachusetts Right To Know
2-Butoxyethanol 111-76-2	X
Isopropyl alcohol 67-63-0	X
p-Toluenesulfonic acid	X

104-15-4	

Component	Minnesota Right To Know
2-Butoxyethanol 111-76-2	X
Isopropyl alcohol 67-63-0	X

Component	New Jersey Right To Know
Ethylene glycol monopropyl ether 2807-30-9	X
Diethylene glycol monobutyl ether 112-34-5	X
2-Butoxyethanol 111-76-2	X
Isopropyl alcohol 67-63-0	X
p-Toluenesulfonic acid 104-15-4	X

Component	Pennsylvania Right To Know
Ethylene glycol monopropyl ether 2807-30-9	X
Diethylene glycol monobutyl ether 112-34-5	X
2-Butoxyethanol 111-76-2	X
Isopropyl alcohol 67-63-0	X
p-Toluenesulfonic acid 104-15-4	X

California Prop. 65

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

Canada

Component	NPRI - National Pollutant Release Inventory
Ethylene glycol monopropyl ether 2807-30-9	Part 5, Other Groups and Mixtures; Part 4 Substance
Diethylene glycol monobutyl ether 112-34-5	Part 5, Other Groups and Mixtures; Part 4 Substance
2-Butoxyethanol 111-76-2	Part 5, Individual Substances; Part 4 Substance
Isopropyl alcohol 67-63-0	Part 5, Individual Substances; Part 4 Substance
p-Toluenesulfonic acid 104-15-4	Part 4 Substance

16. OTHER INFORMATION

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

Revision Date May-15-2019

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