SAFETY DATA SHEET

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Jul-28-2015	Jul-28-2015	1.1

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

Product identifier

Product code RMAX2 - YW

Product name Roland Eco-Sol Max 2 Compatible Yellow

Product category 202 Series Inkjet Ink

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
LiqueColor, Inc.
2108 Research Park Blvd.
Norman, OK, 73069
Tel: 1-888-256-7446
www.liquecolor.com

2. HAZARDS IDENTIFICATION

Classification

Serious eye damage/eye irritation	Category 2 - (H319)
Reproductive toxicity	Category 1B - (H360)

Label elements

Signal Word
Danger

Hazard Statements
H319 - Causes serious eye irritation
H360 - May damage fertility or the unborn child

Precautionary Statements
P201 - Obtain special instructions before use
P280 - Wear protective gloves/protective clothing/eye protection/face protection

P308 + P313 - IF exposed or concerned: Get medical advice/attention
P202 - Do not handle until all safety precautions have been read and understood

Hazards not otherwise classified (HNOC)
No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Component	CAS-No	Weight %	Trade Secret	Note
Diethylene glycol diethyl ether	112-36-7	30 - 60	*	
Diethylene Glycol Methyl Ethyl Ether	1002-67-1	10 - 30	*	
Gamma Butyrolactone	96-48-0	10 - 30	*	
Tetraglyme	143-24-8	10 - 30	*	
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10	*	
Propylene glycol monomethyl ether acetate	108-65-6	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
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm

Component	Ontario TWAEV
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm
Propylene glycol monomethyl ether acetate 108-65-6	TWA: 50 ppm TWA: 270 mg/m^3

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.

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.

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**	Colored Liquid
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	64 °C / 147 °F	Closed 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	0.98	
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) 8.19

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
54.9	54.88	4.5	539.08

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	There is no data for this product.
Eye Contact	There is no data for this product.
Skin Contact	There is no data for this product.
Ingestion	There is no data for this product.

Component	Oral LD50
Gamma Butyrolactone 96-48-0	1540 mg/kg (Rat)
Tetraglyme 143-24-8	5140 mg/kg (Rat)
Ethylene glycol monobutyl ether acetate 112-07-2	1600 mg/kg (Rat)
Propylene glycol monomethyl ether acetate 108-65-6	8532 mg/kg (Rat)

Component	LD50 Dermal
Ethylene glycol monobutyl ether acetate 112-07-2	1480 mg/kg (Rabbit)
Propylene glycol monomethyl ether acetate 108-65-6	5000 mg/kg (Rabbit)

Component	Inhalation LC50
Gamma Butyrolactone 96-48-0	>2.68 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms There is no data for this product.

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

Skin corrosion/irritation	There is no data for this product.
Eye damage/irritation	There is no data for this product.
Irritation	There is no data for this product.
Corrosivity	There is no data for this product.
Sensitisation	There is no data for this product.
Mutagenic Effects	There is no data for this product.
Reproductive Effects	There is no data for this product.
STOT - single exposure	There is no data for this product.
STOT - repeated exposure	There is no data for this product.
Chronic Toxicity	There is no data for this product
Aspiration hazard	There is no data for this product.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH
Ethylene glycol monobutyl ether acetate 112-07-2	A3

Numerical measures of toxicity - Product Information

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

ATEmix (oral)	6,160.00 mg/kg
ATEmix (dermal)	20,035.00 mg/kg mg/l
ATEmix (inhalation-dust/mist)	21.20 mg/l
ATEmix (inhalation-vapor)	155.00 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity
None known

0.04% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Component	Algae/aquatic plants
Gamma Butyrolactone 96-48-0	72h EC50 Desmodesmus subspicatus: 360 mg/L 96h EC50 Desmodesmus subspicatus: 79 mg/L
Ethylene glycol monobutyl ether acetate 112-07-2	72h EC50 Desmodesmus subspicatus: >500 mg/L

Component	Fish
Gamma Butyrolactone 96-48-0	96h LC50 Leuciscus idus: 220 - 460 mg/L [static]
Propylene glycol monomethyl ether acetate 108-65-6	96h LC50 Pimephales promelas: 161 mg/L [static]

Component	Crustacea
Gamma Butyrolactone 96-48-0	48h EC50 Daphnia magna Straus: >500 mg/L
Propylene glycol monomethyl ether acetate 108-65-6	48h EC50 Daphnia magna: >500 mg/L

Persistence and Degradability
No information available.

Bioaccumulation
No information available.

Component	Partition coefficient
Gamma Butyrolactone 96-48-0	-0.566
Ethylene glycol monobutyl ether acetate 112-07-2	1.51
Propylene glycol monomethyl ether acetate 108-65-6	0.43

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

DOT Not regulated

Proper Shipping Name Printing Ink

ICAO / IATA / IMDG / IMO Not Regulated
Proper Shipping Name Printing Ink

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
Diethylene glycol diethyl ether	112-36-7	30 - 60	1.0
Diethylene Glycol Methyl Ethyl Ether	1002-67-1	10 - 30	1.0
Ethylene glycol monobutyl ether acetate	112-07-2	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 %
Diethylene glycol diethyl ether	112-36-7	30 - 60
Diethylene Glycol Methyl Ethyl Ether	1002-67-1	10 - 30
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10

U.S. State Regulations

Component	New Jersey Right To Know
Diethylene glycol diethyl ether 112-36-7	X
Diethylene Glycol Methyl Ethyl Ether 1002-67-1	X
Ethylene glycol monobutyl ether acetate 112-07-2	X

Component	Pennsylvania Right To Know
Diethylene glycol diethyl ether 112-36-7	X
Diethylene Glycol Methyl Ethyl Ether 1002-67-1	X
Ethylene glycol monobutyl ether acetate 112-07-2	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
Diethylene glycol diethyl ether 112-36-7	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
Gamma Butyrolactone 96-48-0	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 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
Propylene glycol monomethyl ether acetate 108-65-6	Part 5, Other Groups and Mixtures 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**	**Flammability**	**Reactivity**	**Personal Protection**
	3 *	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 Jul-28-2015

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 MSDS