



# SAFETY DATA SHEET

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

### Product identifier

Product code **RMLES - YW**  
Product name **Roland Eco-Sol Compatible Yellow**  
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  
LiqueColor, Inc.  
2108 Research Park Blvd.  
Norman, OK, 73069  
Tel: 1-888-256-7446  
www.liquecolor.com

## 2. HAZARDS IDENTIFICATION

### Classification

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

### Label elements



Signal Word  
Warning

### Hazard Statements

H319 - Causes serious eye irritation  
H332 - Harmful if inhaled

### Hazards not otherwise classified (HNOC)

May be harmful if swallowed. May be harmful in contact with skin. Combustible liquid.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Mixture

Component	CAS-No	Weight %	Trade Secret	Note
Diethylene glycol diethyl ether	112-36-7	30 - 60	*	
Gamma Butyrolactone	96-48-0	10 - 30	*	
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10	*	
Triethylene glycol monobutyl ether	143-22-6	1 - 5	*	
Dimethyl Succinate	106-65-0	1 - 5	*	
Nickel Compounds	Trade Secret	1 - 5	*	
Dimethyl Glutarate	1119-40-0	1 - 5	*	

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

### 4. FIRST AID MEASURES

#### Description of first aid measures

<b>General Advice</b>	Show this safety data sheet to the doctor in attendance.
<b>Eye Contact</b>	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.
<b>Skin Contact</b>	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.
<b>Inhalation</b>	Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.
<b>Ingestion</b>	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 (CO<sub>2</sub>). 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**

<b>Component</b>	<b>ACGIH TLV</b>
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm

<b>Component</b>	<b>Ontario TWAEV</b>
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm

### **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

<b>Physical State</b>	Liquid	<b>Appearance</b>	Colored Liquid
<b>Odor</b>	Characteristic	<b>Odor Threshold</b>	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks - Method</u>
pH		No data available
Melting point/freezing point		No data available
Boiling point/Boiling Range	> 149 °C / 300 °F	
Flash Point	82 °C / 180 °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	1	
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

<b>Explosive Properties</b>	No data available
<b>Oxidizing Properties</b>	No data available

### Other Information

<b>Photochemically Reactive</b>	No
<b>Weight Per Gallon (lbs/gal)</b>	8.32

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
93.1	No information available	7.74	927.68

## 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 (CO<sub>2</sub>). Carbon monoxide.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

<b>Inhalation</b>	There is no data for this product.
<b>Eye Contact</b>	There is no data for this product.
<b>Skin Contact</b>	There is no data for this product.
<b>Ingestion</b>	There is no data for this product.

Component	Oral LD50
Gamma Butyrolactone 96-48-0	1540 mg/kg ( Rat )
Ethylene glycol monobutyl ether acetate 112-07-2	1600 mg/kg ( Rat )
Triethylene glycol monobutyl ether 143-22-6	5300 mg/kg ( Rat )
Dimethyl Succinate 106-65-0	>5000 mg/kg ( Rat )
Dimethyl Glutarate 1119-40-0	8191 mg/kg ( Rat )

Component	LD50 Dermal
Ethylene glycol monobutyl ether acetate 112-07-2	1480 mg/kg ( Rabbit )
Triethylene glycol monobutyl ether 143-22-6	3480 mg/kg ( Rabbit )
Dimethyl Succinate 106-65-0	>5000 mg/kg ( Rabbit )

Component	Inhalation LC50
Gamma Butyrolactone 96-48-0	>2.68 mg/L ( Rat ) 4 h
Dimethyl Glutarate 1119-40-0	>5.6 mg/L ( Rat ) 4 h

### Information on toxicological effects

<b>Symptoms</b>	There is no data for this product.
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### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Skin corrosion/irritation</b>	There is no data for this product.
<b>Eye damage/irritation</b>	There is no data for this product.
<b>Irritation</b>	There is no data for this product.
<b>Corrosivity</b>	There is no data for this product.
<b>Sensitisation</b>	There is no data for this product.
<b>Mutagenic Effects</b>	There is no data for this product.
<b>Reproductive Effects</b>	There is no data for this product.
<b>STOT - single exposure</b>	There is no data for this product.
<b>STOT - repeated exposure</b>	There is no data for this product.
<b>Chronic Toxicity</b>	There is no data for this product.
<b>Aspiration hazard</b>	There is no data for this product.
<b>Carcinogenicity</b>	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

Component	IARC
Nickel Compounds	Group 1

Component	NTP
Nickel Compounds	Known

Component	OSHA
Nickel Compounds	X

**Numerical measures of toxicity - Product Information**

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

<b>ATEmix (oral)</b>	4,429.00 mg/kg
<b>ATEmix (dermal)</b>	13,382.00 mg/kg mg/l
<b>ATEmix (inhalation-dust/mist)</b>	18.70 mg/l
<b>ATEmix (inhalation-vapor)</b>	137.00 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
Triethylene glycol monobutyl ether 143-22-6	72h EC50 Desmodesmus subspicatus: 500 mg/L

Component	Fish
Gamma Butyrolactone 96-48-0	96h LC50 Leuciscus idus: 220 - 460 mg/L [static]
Triethylene glycol monobutyl ether 143-22-6	96h LC50 Leuciscus idus: 2200 - 4600 mg/L [static] 96h LC50 Pimephales promelas: 2400 mg/L 96h LC50 Pimephales promelas: 2400 mg/L [static]
Dimethyl Succinate 106-65-0	96h LC50 Brachydanio rerio: 50 - 100 mg/L [static]
Dimethyl Glutarate 1119-40-0	96h LC50 Pimephales promelas: 19.6 - 26.2 mg/L [static]

Component	Crustacea
Gamma Butyrolactone 96-48-0	48h EC50 Daphnia magna Straus: >500 mg/L
Triethylene glycol monobutyl ether 143-22-6	48h EC50 Daphnia magna: 500 mg/L
Dimethyl Glutarate 1119-40-0	48h EC50 Daphnia magna: 122.1 - 163.5 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
Triethylene glycol monobutyl ether 143-22-6	0.51
Dimethyl Succinate 106-65-0	0.19

**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****Proper Shipping Name**

Not regulated

Printing Ink

**ICAO / IATA / IMDG / IMO****Proper Shipping Name**

Not Regulated

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
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10	1.0
Triethylene glycol monobutyl ether	143-22-6	1 - 5	1.0
Nickel Compounds	Trade Secret	1 - 5	0.1

**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
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10
Triethylene glycol monobutyl ether	143-22-6	1 - 5
Nickel Compounds	Trade Secret	1 - 5

**U.S. State Regulations**

Component	New Jersey Right To Know
Diethylene glycol diethyl ether 112-36-7	X
Ethylene glycol monobutyl ether acetate 112-07-2	X
Triethylene glycol monobutyl ether 143-22-6	X
Nickel Compounds	X

Component	Pennsylvania Right To Know
Diethylene glycol diethyl ether 112-36-7	X
Ethylene glycol monobutyl ether acetate 112-07-2	X
Triethylene glycol monobutyl ether 143-22-6	X
Nickel Compounds	X

**California Prop. 65**

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm

Component	California Prop. 65
Nickel Compounds	Carcinogen

**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
Dimethyl Succinate 106-65-0	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
Nickel Compounds	Part 1, Group A Substance total of the pure element and the equivalent weight of the element contained in any compound, alloy or mixture
Dimethyl Glutarate 1119-40-0	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

<b>16. OTHER INFORMATION</b>
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<b>HMIS:</b>	<b>Health</b> 3 *	<b>Flammability</b> 2	<b>Reactivity</b> 0	<b>Personal Protection</b> X
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**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**

Jun-24-2015

**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**