Material Safety Data Sheet

1. Article and Corporate Identification

1.1. Product:

SOL INK, ESL-BK

1.2. Manufacturer/Distributor:

Manufacture's name:	Roland DG Corporation
Address:	1-6-4 Shinmiyakoda Hamamatsu-shi Shizuoka 431-2103 JAPAN
Phone:	+ 81-53-484-1224
Fax:	+ 81-53-484-1221

1.3. Medical Emergency Number

Not Available

2. Composition Information

This is a solvent ink formulation

Ink Composition	CAS No.	% By Weight
Carbon black	1333-86-4	1-5%
Dipropylene glycol mono-methyl ether	34590-94-8	15-25%
Proprietary organic materials	-	balance

3. Hazards Identification

3.1 Emergency Overview:

Ink component is a black liquid that cause eye, nose or throat irritation, and that effects anesthesia, if inhales. Ink may flash, when under high temperature. Avoid contact with eyes or clothing. In the case of skin contact, wash with soap and water. Keep out of reach of children.

3.2 Potential Health Effect:

Eyes:	Ink Contact with eye will be irritating. See Section 11 for Toxicology.
Skin:	Ink contact with skin may cause minimally irritation. See Section 11 for Toxicology.
Inhalation:	Intentional exposure to ink vapors(mist) will cause respiratory irritation and anesthesia. See Section 11 for Toxicology.
Ingestion:	May cause upset stomach. See Section 11 for Toxicology.

4. First Aid Measures

4.1 Eyes:	Immediately flush with room temperature, low pressure, clean water for at least 15 minutes. Seek medical attention if eye irritation continues.
4.2 Skin:	Wash surface areas with soap and water. Wash soiled clothing before rewearing. Consult a physician if irritation continues.
4.3 Inhalation:	Remove subject to ventilated fresh air. If not breathing, give artificial respiration right away. If breathing is difficult, give oxygen. Seek immediate medical attention.
4.4 Ingestion:	Seek medical advice; and attention if stomach continues to be upset.

5. Fire Fighting Measures

5.1 Flammability:	Combustible liquid. See section 9 for Flash Point.
5.2 Extinguishing Media:	Water spray, dry chemical, carbon dioxide or, alcohol foam.
5.3 Fire Fighting Instructions:	Extinguish to use fire fighting media or plentiful fog water. Put protection wear without fail in case of fire fighting work; do not work in the leeward.

6. Accidental Release Measures

Remove the person of the leeward. Keep away the person from periphery of the place of the leakage. Remove the ignition promptly. Put protection wear without fail in case of work; do not work in the leeward. Ventilate sufficiently during clean-up in case of inside of a house.

Use sponges to wipe-up ink, then rinse area with damp cloth. Place waste in closed container for disposal. Do not dispose of waste to the sewer. Wash hands with soap and water.

7. Precautions for Safe Handling and Use

Keep out of reach of children and do not drink ink. Use proper ventilation (see addendum) and no fire in work place. Do notstore the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not dismantle cartridge.

Do not store cartridges with oxidizing agents or explosives. Make sure cartridge is dry before insertion into printer housing.

8. Exposure Controls and Personal Protection

8.1 Engineering controls:	Proper ventilation (see addendum)
8.2 Exposure controls:	Not established
8.3 Personal protection:	Not required under suitable use as setting the cartridge on the printer.

9. Physical and Chemical Properties of Ink Formulation

Appearance	Black liquid
Odor:	Slightly
pH:	Not applicable
Boiling point:	No data available
Melting point:	No data available
Flash point:	about 71 deg.C (Closed cup)
Autoflammability:	None
Explosive properties:	1.1-14v/v% as dipropylene glycol mono-methyl ether
Oxidizing properties:	None
Vapor pressure:	Greater than 1 (air=1)
Relative density:	No data available
Solubility in water:	Soluble
Solubility in fat:	No data available
Partition coefficient:	No data available
Viscosity:	No data available

10. Stability and Reactivity

Stability:	Stable under normal temperature
Hazardous polymerization:	No data available
Hazardous decomposition products:	No data available
Incompatible materials:	Oxidizers and explosives

11. Toxicology and Health Hazards

Routes Of Overexposure: Eye, skin, inhalation, and oral

Acute Health Hazards:

- Overexposure of eye surface to ink may be mildly irritating
- Overexposure of skin to ink contact may cause irritation and in some people swelling and redness.
- Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
- Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards:	None Known
Mugtagenicity:	None Known
Carcinogenicity:	With excessive exposure, carbon black has been listed as a possible human carcinogen. However, as engineered within this ink cartridge, emissions to air of carbon black during normal printing use have not been found. IARC, the International Agency for Research on Cancer, has found printing inks to be not classifiable as human carcinogens.

Toxicity Data:

Oral LD_{50}	Dermal LD_{50}	Inhalant LC_{50}	OSHA Regulated
No data available	No data available	No data available	Not Established

Eye irritating:	Mildly or serious irritating*	*Analogical inference from material data
Skin irritating:	Minimally irritating*	
Skin Sensitizing:	No data available	

12. Ecological Information

No data available on the adverse effects of this material on the environment

13. Disposal Considerations

Used and unused cartridges are not a federal RCRA hazardous waste. Disposal should be in accordance with local, state, and federal requirements.

14. Transportation Information

No regulated as Hazardous Material

15. Regulatory Considerations

US information:	Not regulated
EU information:	Not regulated

16. Other Information

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of precaution, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.

Material Safety Data Sheet

1. Article and Corporate Identification

1.1. Product:

SOL INK, ESL-YE

1.2. Manufacturer/Distributor:

Manufacture's name: Roland DG Corporation
Address: 1-6-4 Shinmiyakoda Hamamatsu-shi
Shizuoka 431-2103
JAPAN
Phone: + 81-53-484-1224
Fax: + 81-53-484-1221

1.3. Medical Emergency Number

Not Available

2. Composition Information

This is a solvent ink formulation

Ink Composition	CAS No.	% By Weight
Proprietary pigment	-	1-5%
Dipropylene glycol mono-methyl ether	34590-94-8	15-25%
Proprietary organic materials	-	balance

3. Hazards Identification

3.1 Emergency Overview:

Ink component is a yellow liquid that cause eye, nose or throat irritation, and that effects anesthesia, if inhales. Ink may flash, when under high temperature. Avoid contact with eyes or clothing. In the case of skin contact, wash with soap and water. Keep out of reach of children.

3.2 Potential Health Effect:

Eyes: Ink Contact with eye will be irritating. See Section 11 for Toxicology.
Skin: Ink contact with skin may cause minimally irritation. See Section 11 for Toxicology.
Inhalation: Intentional exposure to ink vapors(mist) will cause respiratory irritation and anesthesia. See Section 11 for Toxicology.
Ingestion: May cause upset stomach. See Section 11 for Toxicology.

4. First Aid Measures

4.1 Eyes: Immediately flush with room temperature, low pressure, clean water for at least 15 minutes. Seek medical attention if eye irritation continues.
4.2 Skin: Wash surface areas with soap and water. Wash soiled clothing before rewearing. Consult a physician if irritation continues.
4.3 Inhalation: Remove subject to ventilated fresh air. If not breathing, give artificial respiration right away. If breathing is difficult, give oxygen. Seek immediate medical attention.
4.4 Ingestion: Seek medical advice; and attention if stomach continues to be upset.

5. Fire Fighting Measures

5.1 Flammability:	Combustible liquid. See section 9 for Flash Point.
5.2 Extinguishing Media:	Water spray, dry chemical, carbon dioxide or, alcohol foam.
5.3 Fire Fighting Instructions:	Extinguish to use fire fighting media or plentiful fog water. Put protection wear without fail in case of fire fighting work; do not work in the leeward.

6. Accidental Release Measures

Remove the person of the leeward. Keep away the person from periphery of the place of the leakage. Remove the ignition promptly. Put protection wear without fail in case of work; do not work in the leeward. Ventilate sufficiently during clean-up in case of inside of a house.

Use sponges to wipe-up ink, then rinse area with damp cloth. Place waste in closed container for disposal. Do not dispose of waste to the sewer. Wash hands with soap and water.

7. Precautions for Safe Handling and Use

Keep out of reach of children and do not drink ink. Use proper ventilation (see addendum) and no fire in work place. Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not dismantle cartridge.

Do not store cartridges with oxidizing agents or explosives. Make sure cartridge is dry before insertion into printer housing.

8. Exposure Controls and Personal Protection

8.1 Engineering controls:	Proper ventilation (see addendum)
8.2 Exposure controls:	Not established
8.3 Personal protection:	Not required under suitable use as setting the cartridge on the printer.

9. Physical and Chemical Properties of Ink Formulation

Appearance	Yellow liquid
Odor:	Slightly
pH:	Not applicable
Boiling point:	No data available
Melting point:	No data available
Flash point:	about 71 deg.C (Closed cup)
Autoflammability:	None
Explosive properties:	1.1-14v/v% as dipropylene glycol mono-methyl ether
Oxidizing properties:	None
Vapor pressure:	Greater than 1 (air=1)
Relative density:	No data available
Solubility in water:	Soluble
Solubility in fat:	No data available
Partition coefficient:	No data available
Viscosity:	No data available

10. Stability and Reactivity

Stability:	Stable under normal temperature
Hazardous polymerization:	No data available
Hazardous decomposition products:	No data available
Incompatible materials:	Oxidizers and explosives

11. Toxicology and Health Hazards

Routes Of Overexposure: Eye, skin, inhalation, and oral

Acute Health Hazards:

- Overexposure of eye surface to ink may be mildly irritating
- Overexposure of skin to ink contact may cause irritation and in some people swelling and redness.
- Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
- Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards:	None Known
Mugtagenicity:	None Known
Carcinogenicity:	None Known

Toxicity Data:	Oral LD_{50}	Dermal LD_{50}	Inhalant LC_{50}	OSHA Regulated
	No data available	No data available	No data available	Not Established

Eye irritating:	Mildly or serious irritating*
Skin irritating:	Minimally irritating*
Skin Sensitizing:	No data available

*Analogical inference from material data

12. Ecological Information

No data available on the adverse effects of this material on the environment

13. Disposal Considerations

Used and unused cartridges are not a federal RCRA hazardous waste. Disposal should be in accordance with local, state, and federal requirements.

14. Transportation Information

No regulated as Hazardous Material

15. Regulatory Considerations

US information:	Not regulated
EU information:	Not regulated

16. Other Information

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of precaution, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.

Material Safety Data Sheet

1. Article and Corporate Identification

1.1. Product:

SOL INK, ESL-MG

1.2. Manufacturer/Distributor:

Manufacture's name: Roland DG Corporation
Address: 1-6-4 Shinmiyakoda Hamamatsu-shi
Shizuoka 431-2103
JAPAN
Phone: + 81-53-484-1224
Fax: + 81-53-484-1221

1.3. Medical Emergency Number

Not Available

2. Composition Information

This is a solvent ink formulation

Ink Composition	CAS No.	% By Weight
Proprietary pigment	-	1-5%
Dipropylene glycol mono-methyl ether	34590-94-8	15-25%
Proprietary organic materials	-	balance

3. Hazards Identification

3.1 Emergency Overview:

Ink component is a magenda liquid that cause eye, nose or throat irritation, and that effects anesthesia, if inhales. Ink may flash, when under high temperature. Avoid contact with eyes or clothing. In the case of skin contact, wash with soap and water. Keep out of reach of children.

3.2 Potential Health Effect:

Eyes: Ink Contact with eye will be irritating. See Section 11 for Toxicology.
Skin: Ink contact with skin may cause minimally irritation. See Section 11 for Toxicology.
Inhalation: Intentional exposure to ink vapors(mist) will cause respiratory irritation and anesthesia. See Section 11 for Toxicology.
Ingestion: May cause upset stomach. See Section 11 for Toxicology.

4. First Aid Measures

4.1 Eyes: Immediately flush with room temperature, low pressure, clean water for at least 15 minutes. Seek medical attention if eye irritation continues.
4.2 Skin: Wash surface areas with soap and water. Wash soiled clothing before rewearing. Consult a physician if irritation continues.
4.3 Inhalation: Remove subject to ventilated fresh air. If not breathing, give artificial respiration right away. If breathing is difficult, give oxygen. Seek immediate medical attention.
4.4 Ingestion: Seek medical advice; and attention if stomach continues to be upset.

5. Fire Fighting Measures

5.1 Flammability:	Combustible liquid. See section 9 for Flash Point.
5.2 Extinguishing Media:	Water spray, dry chemical, carbon dioxide or, alcohol foam.
5.3 Fire Fighting Instructions:	Extinguish to use fire fighting media or plentiful fog water. Put protection wear without fail in case of fire fighting work; do not work in the leeward.

6. Accidental Release Measures

Remove the person of the leeward. Keep away the person from periphery of the place of the leakage. Remove the ignition promptly. Put protection wear without fail in case of work; do not work in the leeward. Ventilate sufficiently during clean-up in case of inside of a house.

Use sponges to wipe-up ink, then rinse area with damp cloth. Place waste in closed container for disposal. Do not dispose of waste to the sewer. Wash hands with soap and water.

7. Precautions for Safe Handling and Use

Keep out of reach of children and do not drink ink. Use proper ventilation (see addendum) and no fire in work place. Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not dismantle cartridge.

Do not store cartridges with oxidizing agents or explosives. Make sure cartridge is dry before insertion into printer housing.

8. Exposure Controls and Personal Protection

8.1 Engineering controls:	Proper ventilation (see addendum)
8.2 Exposure controls:	Not established
8.3 Personal protection:	Not required under suitable use as setting the cartridge on the printer.

9. Physical and Chemical Properties of Ink Formulation

Appearance	Magenda liquid
Odor:	Slightly
pH:	Not applicable
Boiling point:	No data available
Melting point:	No data available
Flash point:	about 71 deg.C (Closed cup)
Autoflammability:	None
Explosive properties:	1.1-14v/v% as dipropylene glycol mono-methyl ether
Oxidizing properties:	None
Vapor pressure:	Greater than 1 (air=1)
Relative density:	No data available
Solubility in water:	Soluble
Solubility in fat:	No data available
Partition coefficient:	No data available
Viscosity:	No data available

10. Stability and Reactivity

Stability:	Stable under normal temperature
Hazardous polymerization:	No data available
Hazardous decomposition products:	No data available
Incompatible materials:	Oxidizers and explosives

11. Toxicology and Health Hazards

Routes Of Overexposure: Eye, skin, inhalation, and oral

Acute Health Hazards:

- Overexposure of eye surface to ink may be mildly irritating
- Overexposure of skin to ink contact may cause irritation and in some people swelling and redness.
- Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
- Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards:	None Known
Mugtagenicity:	None Known
Carcinogenicity:	None Known

Toxicity Data:	Oral LD_{50}	Dermal LD_{50}	Inhalant LC_{50}	OSHA Regulated
	No data available	No data available	No data available	Not Established

Eye irritating:	Mildly or serious irritating*
Skin irritating:	Minimally irritating*
Skin Sensitizing:	No data available

*Analogical inference from material data

12. Ecological Information

No data available on the adverse effects of this material on the environment

13. Disposal Considerations

Used and unused cartridges are not a federal RCRA hazardous waste. Disposal should be in accordance with local, state, and federal requirements.

14. Transportation Information

No regulated as Hazardous Material

15. Regulatory Considerations

US information:	Not regulated
EU information:	Not regulated

16. Other Information

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of precaution, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.

Material Safety Data Sheet

1. Article and Corporate Identification

1.1. Product:

SOL INK, ESL-CY

1.2. Manufacturer/Distributor:

Manufacture's name: Roland DG Corporation
Address: 1-6-4 Shinmiyakoda Hamamatsu-shi
Shizuoka 431-2103
JAPAN
Phone: + 81-53-484-1224
Fax: + 81-53-484-1221

1.3. Medical Emergency Number

Not Available

2. Composition Information

This is a solvent ink formulation

Ink Composition	CAS No.	% By Weight
Proprietary pigment	-	1-5%
Dipropylene glycol mono-methyl ether	34590-94-8	15-25%
Proprietary organic materials	-	balance

3. Hazards Identification

3.1 Emergency Overview:

Ink component is a cyan liquid that cause eye, nose or throat irritation, and that effects anesthesia, if inhales. Ink may flash, when under high temperature. Avoid contact with eyes or clothing. In the case of skin contact, wash with soap and water. Keep out of reach of children.

3.2 Potential Health Effect:

Eyes: Ink Contact with eye will be irritating. See Section 11 for Toxicology.
Skin: Ink contact with skin may cause minimally irritation. See Section 11 for Toxicology.
Inhalation: Intentional exposure to ink vapors(mist) will cause respiratory irritation and anesthesia. See Section 11 for Toxicology.
Ingestion: May cause upset stomach. See Section 11 for Toxicology.

4. First Aid Measures

4.1 Eyes: Immediately flush with room temperature, low pressure, clean water for at least 15 minutes. Seek medical attention if eye irritation continues.
4.2 Skin: Wash surface areas with soap and water. Wash soiled clothing before rewearing. Consult a physician if irritation continues.
4.3 Inhalation: Remove subject to ventilated fresh air. If not breathing, give artificial respiration right away. If breathing is difficult, give oxygen. Seek immediate medical attention.
4.4 Ingestion: Seek medical advice; and attention if stomach continues to be upset.

5. Fire Fighting Measures

5.1 Flammability:	Combustible liquid. See section 9 for Flash Point.
5.2 Extinguishing Media:	Water spray, dry chemical, carbon dioxide or, alcohol foam.
5.3 Fire Fighting Instructions:	Extinguish to use fire fighting media or plentiful fog water. Put protection wear without fail in case of fire fighting work; do not work in the leeward.

6. Accidental Release Measures

Remove the person of the leeward. Keep away the person from periphery of the place of the leakage. Remove the ignition promptly. Put protection wear without fail in case of work; do not work in the leeward. Ventilate sufficiently during clean-up in case of inside of a house.

Use sponges to wipe-up ink, then rinse area with damp cloth. Place waste in closed container for disposal. Do not dispose of waste to the sewer. Wash hands with soap and water.

7. Precautions for Safe Handling and Use

Keep out of reach of children and do not drink ink. Use proper ventilation (see addendum) and no fire in work place. Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not dismantle cartridge.

Do not store cartridges with oxidizing agents or explosives. Make sure cartridge is dry before insertion into printer housing.

8. Exposure Controls and Personal Protection

8.1 Engineering controls:	Proper ventilation (see addendum)
8.2 Exposure controls:	Not established
8.3 Personal protection:	Not required under suitable use as setting the cartridge on the printer.

9. Physical and Chemical Properties of Ink Formulation

Appearance	Cyan liquid
Odor:	Slightly
pH:	Not applicable
Boiling point:	No data available
Melting point:	No data available
Flash point:	about 71 deg.C (Closed cup)
Autoflammability:	None
Explosive properties:	1.1-14v/v% as dipropylene glycol mono-methyl ether
Oxidizing properties:	None
Vapor pressure:	Greater than 1 (air=1)
Relative density:	No data available
Solubility in water:	Soluble
Solubility in fat:	No data available
Partition coefficient:	No data available
Viscosity:	No data available

10. Stability and Reactivity

Stability:	Stable under normal temperature
Hazardous polymerization:	No data available
Hazardous decomposition products:	No data available
Incompatible materials:	Oxidizers and explosives

11. Toxicology and Health Hazards

Routes Of Overexposure: Eye, skin, inhalation, and oral

Acute Health Hazards:

- Overexposure of eye surface to ink may be mildly irritating
- Overexposure of skin to ink contact may cause irritation and in some people swelling and redness.
- Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
- Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards:	None Known
Mugtagenicity:	None Known
Carcinogenicity:	None Known

Toxicity Data:	Oral LD_{50}	Dermal LD_{50}	Inhalant LC_{50}	OSHA Regulated
	No data available	No data available	No data available	Not Established

Eye irritating:	Mildly or serious irritating*
Skin irritating:	Minimally irritating*
Skin Sensitizing:	No data available

*Analogical inference from material data

12. Ecological Information

No data available on the adverse effects of this material on the environment

13. Disposal Considerations

Used and unused cartridges are not a federal RCRA hazardous waste. Disposal should be in accordance with local, state, and federal requirements.

14. Transportation Information

No regulated as Hazardous Material

15. Regulatory Considerations

US information:	Not regulated
EU information:	Not regulated

16. Other Information

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of precaution, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.

Material Safety Data Sheet

1. Article and Corporate Identification

1.1. Product:

SOL INK, ESL-LM

1.2. Manufacturer/Distributor:

Manufacture's name:	Roland DG Corporation
Address:	1-6-4 Shinmiyakoda Hamamatsu-shi Shizuoka 431-2103 JAPAN
Phone:	+ 81-53-484-1224
Fax:	+ 81-53-484-1221

1.3. Medical Emergency Number

Not Available

2. Composition Information

This is a solvent ink formulation

Ink Composition	CAS No.	% By Weight
Proprietary pigment	-	<1%
Dipropylene glycol mono-methyl ether	34590-94-8	15-25%
Proprietary organic materials	-	balance

3. Hazards Identification

3.1 Emergency Overview:

Ink component is a light magenda liquid that cause eye, nose or throat irritation, and that effects anesthesia, if inhales. Ink may flash, when under high temperature. Avoid contact with eyes or clothing. In the case of skin contact, wash with soap and water. Keep out of reach of children.

3.2 Potential Health Effect:

Eyes:	Ink Contact with eye will be irritating. See Section 11 for Toxicology.
Skin:	Ink contact with skin may cause minimally irritation. See Section 11 for Toxicology.
Inhalation:	Intentional exposure to ink vapors(mist) will cause respiratory irritation and anesthesia. See Section 11 for Toxicology.
Ingestion:	May cause upset stomach. See Section 11 for Toxicology.

4. First Aid Measures

4.1 Eyes:	Immediately flush with room temperature, low pressure, clean water for at least 15 minutes. Seek medical attention if eye irritation continues.
4.2 Skin:	Wash surface areas with soap and water. Wash soiled clothing before rewearing. Consult a physician if irritation continues.
4.3 Inhalation:	Remove subject to ventilated fresh air. If not breathing, give artificial respiration right away. If breathing is difficult, give oxygen. Seek immediate medical attention.
4.4 Ingestion:	Seek medical advice; and attention if stomach continues to be upset.

5. Fire Fighting Measures

5.1 Flammability:	Combustible liquid. See section 9 for Flash Point.
5.2 Extinguishing Media:	Water spray, dry chemical, carbon dioxide or, alcohol foam.
5.3 Fire Fighting Instructions:	Extinguish to use fire fighting media or plentiful fog water. Put protection wear without fail in case of fire fighting work; do not work in the leeward.

6. Accidental Release Measures

Remove the person of the leeward. Keep away the person from periphery of the place of the leakage. Remove the ignition promptly. Put protection wear without fail in case of work; do not work in the leeward. Ventilate sufficiently during clean-up in case of inside of a house.

Use sponges to wipe-up ink, then rinse area with damp cloth. Place waste in closed container for disposal. Do not dispose of waste to the sewer. Wash hands with soap and water.

7. Precautions for Safe Handling and Use

Keep out of reach of children and do not drink ink. Use proper ventilation (see addendum) and no fire in work place. Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not dismantle cartridge.

Do not store cartridges with oxidizing agents or explosives. Make sure cartridge is dry before insertion into printer housing.

8. Exposure Controls and Personal Protection

8.1 Engineering controls:	Proper ventilation (see addendum)
8.2 Exposure controls:	Not established
8.3 Personal protection:	Not required under suitable use as setting the cartridge on the printer.

9. Physical and Chemical Properties of Ink Formulation

Appearance	Light magenda liquid
Odor:	Slightly
pH:	Not applicable
Boiling point:	No data available
Melting point:	No data available
Flash point:	about 71 deg.C (Closed cup)
Autoflammability:	None
Explosive properties:	1.1-14v/v% as dipropylene glycol mono-methyl ether
Oxidizing properties:	None
Vapor pressure:	Greater than 1 (air=1)
Relative density:	No data available
Solubility in water:	Soluble
Solubility in fat:	No data available
Partition coefficient:	No data available
Viscosity:	No data available

10. Stability and Reactivity

Stability:	Stable under normal temperature
Hazardous polymerization:	No data available
Hazardous decomposition products:	No data available
Incompatible materials:	Oxidizers and explosives

11. Toxicology and Health Hazards

Routes Of Overexposure: Eye, skin, inhalation, and oral

Acute Health Hazards:

- Overexposure of eye surface to ink may be mildly irritating
- Overexposure of skin to ink contact may cause irritation and in some people swelling and redness.
- Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
- Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards:	None Known
Mugtagenicity:	None Known
Carcinogenicity:	None Known

Toxicity Data:	Oral LD_{50}	Dermal LD_{50}	Inhalant LC_{50}	OSHA Regulated
	No data available	No data available	No data available	Not Established

Eye irritating:	Mildly or serious irritating*
Skin irritating:	Minimally irritating*
Skin Sensitizing:	No data available

*Analogical inference from material data

12. Ecological Information

No data available on the adverse effects of this material on the environment

13. Disposal Considerations

Used and unused cartridges are not a federal RCRA hazardous waste. Disposal should be in accordance with local, state, and federal requirements.

14. Transportation Information

No regulated as Hazardous Material

15. Regulatory Considerations

US information:	Not regulated
EU information:	Not regulated

16. Other Information

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of precaution, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.

Material Safety Data Sheet

1. Article and Corporate Identification

1.1. Product:

SOL INK, ESL-LC

1.2. Manufacturer/Distributor:

Manufacture's name:	Roland DG Corporation
Address:	1-6-4 Shinmiyakoda Hamamatsu-shi Shizuoka 431-2103 JAPAN
Phone:	+ 81-53-484-1224
Fax:	+ 81-53-484-1221

1.3. Medical Emergency Number

Not Available

2. Composition Information

This is a solvent ink formulation

Ink Composition	CAS No.	% By Weight
Proprietary pigment	-	<1%
Dipropylene glycol mono-methyl ether	34590-94-8	15-25%
Proprietary organic materials	-	balance

3. Hazards Identification

3.1 Emergency Overview:

Ink component is a light cyan liquid that cause eye, nose or throat irritation, and that effects anesthesia, if inhales. Ink may flash, when under high temperature. Avoid contact with eyes or clothing. In the case of skin contact, wash with soap and water. Keep out of reach of children.

3.2 Potential Health Effect:

Eyes:	Ink Contact with eye will be irritating. See Section 11 for Toxicology.
Skin:	Ink contact with skin may cause minimally irritation. See Section 11 for Toxicology.
Inhalation:	Intentional exposure to ink vapors(mist) will cause respiratory irritation and anesthesia. See Section 11 for Toxicology.
Ingestion:	May cause upset stomach. See Section 11 for Toxicology.

4. First Aid Measures

4.1 Eyes:	Immediately flush with room temperature, low pressure, clean water for at least 15 minutes. Seek medical attention if eye irritation continues.
4.2 Skin:	Wash surface areas with soap and water. Wash soiled clothing before rewearing. Consult a physician if irritation continues.
4.3 Inhalation:	Remove subject to ventilated fresh air. If not breathing, give artificial respiration right away. If breathing is difficult, give oxygen. Seek immediate medical attention.
4.4 Ingestion:	Seek medical advice; and attention if stomach continues to be upset.

5. Fire Fighting Measures

5.1 Flammability:	Combustible liquid. See section 9 for Flash Point.
5.2 Extinguishing Media:	Water spray, dry chemical, carbon dioxide or, alcohol foam.
5.3 Fire Fighting Instructions:	Extinguish to use fire fighting media or plentiful fog water. Put protection wear without fail in case of fire fighting work; do not work in the leeward.

6. Accidental Release Measures

Remove the person of the leeward. Keep away the person from periphery of the place of the leakage. Remove the ignition promptly. Put protection wear without fail in case of work; do not work in the leeward. Ventilate sufficiently during clean-up in case of inside of a house.

Use sponges to wipe-up ink, then rinse area with damp cloth. Place waste in closed container for disposal. Do not dispose of waste to the sewer. Wash hands with soap and water.

7. Precautions for Safe Handling and Use

Keep out of reach of children and do not drink ink. Use proper ventilation (see addendum) and no fire in work place. Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not dismantle cartridge.

Do not store cartridges with oxidizing agents or explosives. Make sure cartridge is dry before insertion into printer housing.

8. Exposure Controls and Personal Protection

8.1 Engineering controls:	Proper ventilation (see addendum)
8.2 Exposure controls:	Not established
8.3 Personal protection:	Not required under suitable use as setting the cartridge on the printer.

9. Physical and Chemical Properties of Ink Formulation

Appearance	Light cyan liquid
Odor:	Slightly
pH:	Not applicable
Boiling point:	No data available
Melting point:	No data available
Flash point:	about 71 deg.C (Closed cup)
Autoflammability:	None
Explosive properties:	1.1-14v/v% as dipropylene glycol mono-methyl ether
Oxidizing properties:	None
Vapor pressure:	Greater than 1 (air=1)
Relative density:	No data available
Solubility in water:	Soluble
Solubility in fat:	No data available
Partition coefficient:	No data available
Viscosity:	No data available

10. Stability and Reactivity

Stability:	Stable under normal temperature
Hazardous polymerization:	No data available
Hazardous decomposition products:	No data available
Incompatible materials:	Oxidizers and explosives

11. Toxicology and Health Hazards

Routes Of Overexposure: Eye, skin, inhalation, and oral

Acute Health Hazards:

- Overexposure of eye surface to ink may be mildly irritating
- Overexposure of skin to ink contact may cause irritation and in some people swelling and redness.
- Intentional inhalation overexposure to ink vapors may result in respiratory tract irritation and anesthesia
- Intentional or accidental oral ingestion may cause an upset stomach

Chronic Health Hazards:	None Known
Mugtagenicity:	None Known
Carcinogenicity:	None Known

Toxicity Data:	Oral LD_{50}	Dermal LD_{50}	Inhalant LC_{50}	OSHA Regulated
	No data available	No data available	No data available	Not Established

Eye irritating:	Mildly or serious irritating*
Skin irritating:	Minimally irritating*
Skin Sensitizing:	No data available

*Analogical inference from material data

12. Ecological Information

No data available on the adverse effects of this material on the environment

13. Disposal Considerations

Used and unused cartridges are not a federal RCRA hazardous waste. Disposal should be in accordance with local, state, and federal requirements.

14. Transportation Information

No regulated as Hazardous Material

15. Regulatory Considerations

US information:	Not regulated
EU information:	Not regulated

16. Other Information

This "Material Safety Data Sheet" contains health, safety, and environmental information. It does not replace any precautionary language or use and disposal information which accompanies the product. The information contained herein is believed to be accurate at the time of precaution, but should only be used as a guide. It is subject to revision from time to time. Roland DG does not warrant the completeness or accuracy of the information contained herein.

Addendum to MSDS sheets for ESL Series Ink

Ventilation is not required in open air environments or rooms with large volumes of fresh air.

Proper ventilation is required when operating in a small enclosed room to ensure an adequate supply of fresh air.

The example shown below provides two options to properly ventilate a 10’ by 12’ room.