Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

ECO-SOL MAX2, ESL4-4CY

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

Inkjet Printing
Identified uses: Inkjet Printing
for professional use only
Uses advised against -

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Roland DG Benelux NV
Bell-Telephonelaan 2G
B-2440 Geel
Belgium

Telephone: +32 14 57 59 11

E-mail: info@rolanddg.be

Website: www.rolanddg.be

E-mail (competent person): info@rolanddg.be

1.4. Emergency telephone number

24h: +32 70 245 245 (Centre Antipoisons Belge - Belgisch Antigifcentrum, BE), +31 30 274 88 88 (Nationaal Vergiftigingen Informatie Centrum, Utrecht, NL) , +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

GHS08
Health hazard

GHS05
Corrosion

Signal word: Danger

Hazard components for labelling:

bis(2-(2-methoxyethoxy)ethyl) ether; ?-butyrolactone

hazard statements for health hazards	
H315	Causes skin irritation.
H318	Causes serious eye damage.
H360	May damage fertility or the unborn child.

Precautionary statements Response	
P302 + P352.1	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P362	Take off contaminated clothing.

2.3. Other hazards

Adverse physicochemical effects:
This material is combustible, but will not ignite readily.

Adverse human health effects and symptoms:
No known significant effects or critical hazards.

Adverse environmental effects:
No known significant effects or critical hazards.

Other adverse effects:
No known significant effects or critical hazards.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 112-36-7 **EC No.:** 203-963-7 **REACH No.:** 01-2119969946-13-0000	**bis(2-ethoxyethyl) ether** Skin Irrit. 2 **Warning** H315	40 – 50 Wt %
CAS No.: 96-48-0 **EC No.:** 202-509-5	**?-butyrolactone** Eye Dam. 1, STOT SE 3, Acute Tox. 4 **Danger** H302-H318-H336	< 20 Wt %
CAS No.: 143-24-8 **EC No.:** 205-594-7	**bis(2-(2-methoxyethoxy)ethyl) ether** Repr. 1B **Danger** H360	10 – 20 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:
Provide fresh air.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Consult physician immediately.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion:
Do NOT induce vomiting. Consult physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray, Carbon dioxide (CO2), Foam, Dry extinguishing powder,

5.2. Special hazards arising from the substance or mixture

No data available

5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

5.4. Additional information

No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

See protective measures under point 7 and 8.
Provide adequate ventilation.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
Treat the recovered material as prescribed in the section on waste disposal.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Disposal: see section 13
Personal protection equipment: see section 8

6.5. Additional information

No data available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Use only in well-ventilated areas.
Handle and open container with care.
All work processes must always be designed so that the following is as low as possible: Inhalation, Skin contact, Eye contact.
When using do not eat, drink, smoke, sniff.

Fire prevent measures:

Keep away from sources of ignition. - No smoking.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Keep/Store only in original container. Protect from sunlight.

Hints on storage assembly:

Do not store together with: Oxidising agent
Materials to avoid: Metal, Oxidising agent, Amines

Storage class: 10 – Combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)

Recommendation:

Inkjet Printing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

No data available

8.1.2. biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8	22 mg/m³	① DNEL worker ② DNEL long-term inhalative (systemic)

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:

Eye protection: not required.

Skin protection:

Hand protection: Hand protection: not required.

Respiratory protection:

Respiratory protection necessary at: insufficient ventilation, insufficient exhaust.

Other protection measures:

Body protection: not required.

General health and safety measures: Thorough skin-cleansing after handling the product. Wash contaminated clothing prior to re-use. Avoid contact with skin, eyes and clothes.

8.2.3. Environmental exposure controls

Discharge into the environment must be avoided.

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: liquid
Colour: blue
Odour: characteristic
Odour threshold: not determined

Safety relevant basis data

parameter		at °C	Method	Remark
pH	*not determined*		No data availa ble	
Melting point/freezing point	*not determined*		No data availa ble	
Freezing point	*not determined*			
Initial boiling point and boiling range	*not determined*		No data availa ble	
Decomposition temperature (°C):	*not determined*			
Flash point	71 °C			
Evaporation rate	*not determined*			
Ignition temperature in °C	*not determined*			
Upper/lower flammability or explosive limits	0.3 – 16 Vol-%		as gamma-Buty rolactone	
Vapour pressure	*not determined*		No data availa ble	
Vapour density	*not determined*			
Density	*not determined*		No data availa ble	
Bulk density	*not determined*			

parameter		at °C	Method	Remark
Water solubility (g/L)	easily soluble			
Partition coefficient: n-octanol/ water	*not determined*		No data availa ble	
Dynamic viscosity	< 5 mPa*s	20 °C	No data availa ble	
Kinematic viscosity	*not determined*			

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid
Heat
Frost

10.5. Incompatible materials
Oxidising agent

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LD_{50} oral:** =1,582 mg/kg (Rat) **LC_{50} inhalative:** >5.1 ppmV 4 h
143-24-8	bis(2-(2-methoxyethoxy)ethyl) ether	**LD_{50} oral:** =3,850 mg/kg (Rat)

Acute oral toxicity:
There are no data available on the mixture itself.

Acute dermal toxicity:
There are no data available on the mixture itself.

Acute inhalation toxicity:
There are no data available on the mixture itself.

Skin corrosion/irritation:
There are no data available on the mixture itself.

Eye damage/irritation:
There are no data available on the mixture itself.

Respiratory or skin sensitisation:
not sensitising.

Germ cell mutagenicity:
No experimental indications of in vivo mutagenicity exist.

Carcinogenicity:
No indication of human carcinogenicity.

Reproductive toxicity:
May cause harm to the unborn child. Possible risk of impaired fertility. (Tetraethylene glycol dimethyl ether)

STOT-single exposure:
There are no data available on the mixture itself.

STOT-repeated exposure:
There are no data available on the mixture itself.

Aspiration hazard:
There are no data available on the mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LC_{50}:** =56 mg/l 4 d

Aquatic toxicity:
No information available.

Terrestrial toxicity:
No information available.

Effects in sewage plants:
No information available.

12.2. Persistence and degradability

CAS No.	Substance name	Biodegradation	Remark
112-36-7	bis(2-ethoxyethyl) ether	No	
96-48-0	?-butyrolactone	Yes, rapidly	
143-24-8	bis(2-(2-methoxyethoxy)ethyl) ether	Yes, rapidly	

Additional information:
Further ecological information: No information available.

12.3. Bioaccumulative potential

Accumulation / Evaluation:
No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

CAS No.	Substance name	Results of PBT and vPvB assessment
112-36-7	bis(2-ethoxyethyl) ether	—
96-48-0	?-butyrolactone	—
143-24-8	bis(2-(2-methoxyethoxy)ethyl) ether	—

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Control report for waste code/ waste marking according to EAKV: Do not allow to enter into surface water or drains.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

08 03 17 *	waste printing toner containing dangerous substances

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10	packaging containing residues of or contaminated by dangerous substances

13.2. Additional information

No data available

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.

not relevant

14.2. UN proper shipping name
not relevant

14.3. Transport hazard class(es)
not relevant

14.4. Packing group
not relevant

14.5. Environmental hazards
not relevant

14.6. Special precautions for user
not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not relevant

Additional information:
No dangerous good in sense of these transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU legislation
No data available

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation
§ 5 MuSchRiV
§ 22 JArbSchG
§ 4 MuSchRiV

Water hazard class (WGK)

WGK:
1 - schwach wassergefährdend

Source:
Self-classification

15.2. Chemical Safety Assessment
Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information
No data available

SECTION 16: Other information

16.1. Indication of changes
No data available

16.2. Abbreviations and acronyms
See overview table at www.euphrac.eu

16.3. Key literature references and sources for data
No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H360	May damage fertility or the unborn child.

16.6. Training advice

No data available

16.7. Additional information

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.
TÜV SÜD Industrie Service GmbH
Department Environmental Service
Westendstraße 199
80686 Munich - Germany
-
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
-
Importer/Only Representative :
Roland DG Benelux NV

Manufacturer:
Roland DG Corporation
1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi,
Shizuoka-ken, 431-2103
JAPAN
Telefon: + 81-53-484-1224
Telefax: + 81-53-484-1226

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

ECO-SOL MAX2, ESL4-4MG

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

Inkjet Printing
Identified uses: Inkjet Printing
for professional use only
Uses advised against -

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Roland DG Benelux NV
Bell-Telephonelaan 2G
B-2440 Geel
Belgium

Telephone: +32 14 57 59 11

E-mail: info@rolanddg.be

Website: www.rolanddg.be

E-mail (competent person): info@rolanddg.be

1.4. Emergency telephone number

24h: +32 70 245 245 (Centre Antipoisons Belge - Belgisch Antigifcentrum, BE), +31 30 274 88 88 (Nationaal Vergiftigingen Informatie Centrum, Utrecht, NL) , +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

GHS08
Health hazard

GHS05
Corrosion

Signal word: Danger

Hazard components for labelling:

bis(2-(2-methoxyethoxy)ethyl) ether; ?-butyrolactone

hazard statements for health hazards	
H315	Causes skin irritation.
H318	Causes serious eye damage.
H360	May damage fertility or the unborn child.

Precautionary statements	Response
P302 + P352.1	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P362	Take off contaminated clothing.

2.3. Other hazards

Adverse physicochemical effects:
This material is combustible, but will not ignite readily.

Adverse human health effects and symptoms:
No known significant effects or critical hazards.

Adverse environmental effects:
No known significant effects or critical hazards.

Other adverse effects:
No known significant effects or critical hazards.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 112-36-7 **EC No.:** 203-963-7 **REACH No.:** 01-2119969946-13-0000	**bis(2-ethoxyethyl) ether** Skin Irrit. 2 **Warning** H315	40 – 50 Wt %
CAS No.: 96-48-0 **EC No.:** 202-509-5	**?-butyrolactone** Eye Dam. 1, STOT SE 3, Acute Tox. 4 **Danger** H302-H318-H336	< 20 Wt %
CAS No.: 143-24-8 **EC No.:** 205-594-7	**bis(2-(2-methoxyethoxy)ethyl) ether** Repr. 1B **Danger** H360	10 – 20 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:
Provide fresh air.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Consult physician immediately.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion:
Do NOT induce vomiting. Consult physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray, Carbon dioxide (CO2), Foam, Dry extinguishing powder

5.2. Special hazards arising from the substance or mixture

No data available

5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

5.4. Additional information

No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

See protective measures under point 7 and 8.
Provide adequate ventilation.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
Treat the recovered material as prescribed in the section on waste disposal.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Disposal: see section 13
Personal protection equipment: see section 8

6.5. Additional information

No data available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Use only in well-ventilated areas.
Handle and open container with care.
All work processes must always be designed so that the following is as low as possible: Inhalation, Skin contact, Eye contact.
When using do not eat, drink, smoke, sniff.

Fire prevent measures:

Keep away from sources of ignition. - No smoking.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Keep/Store only in original container. Protect from sunlight.

Hints on storage assembly:

Do not store together with: Oxidising agent
Materials to avoid: Metal, Oxidising agent, Amines

Storage class: 10 – Combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)

Recommendation:

Inkjet Printing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

No data available

8.1.2. biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8	22 mg/m³	① DNEL worker ② DNEL long-term inhalative (systemic)

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:

Eye protection: not required.

Skin protection:

Hand protection: Hand protection: not required.

Respiratory protection:

Respiratory protection necessary at: insufficient ventilation, insufficient exhaust.

Other protection measures:

Body protection: not required.

General health and safety measures: Thorough skin-cleansing after handling the product. Wash contaminated clothing prior to re-use. Avoid contact with skin, eyes and clothes.

8.2.3. Environmental exposure controls

Discharge into the environment must be avoided.

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: liquid
Colour: red
Odour: characteristic
Odour threshold: not determined

Safety relevant basis data

parameter		at °C	Method	Remark
pH	*not determined*		No data availa ble	
Melting point/freezing point	*not determined*		No data availa ble	
Freezing point	*not determined*			
Initial boiling point and boiling range	*not determined*		No data availa ble	
Decomposition temperature (°C):	*not determined*			
Flash point	71 °C			
Evaporation rate	*not determined*			
Ignition temperature in °C	*not determined*			
Upper/lower flammability or explosive limits	0.3 – 16 Vol-%		as gamma-Buty rolactone	
Vapour pressure	*not determined*		No data availa ble	
Vapour density	*not determined*			
Density	*not determined*		No data availa ble	
Bulk density	*not determined*			

parameter		at °C	Method	Remark
Water solubility (g/L)	easily soluble			
Partition coefficient: n-octanol/ water	*not determined*		No data availa ble	
Dynamic viscosity	< 5 mPa*s	20 °C	No data availa ble	
Kinematic viscosity	*not determined*			

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid
Heat
Frost

10.5. Incompatible materials
Oxidising agent

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LD_{50} oral:** =1,582 mg/kg (Rat) **LC_{50} inhalative:** >5.1 ppmV 4 h
143-24-8	bis(2-(2-methoxyethoxy)ethyl) ether	**LD_{50} oral:** =3,850 mg/kg (Rat)

Acute oral toxicity:
There are no data available on the mixture itself.

Acute dermal toxicity:
There are no data available on the mixture itself.

Acute inhalation toxicity:
There are no data available on the mixture itself.

Skin corrosion/irritation:
There are no data available on the mixture itself.

Eye damage/irritation:
There are no data available on the mixture itself.

Respiratory or skin sensitisation:
not sensitising.

Germ cell mutagenicity:
No experimental indications of in vivo mutagenicity exist.

Carcinogenicity:
No indication of human carcinogenicity.

Reproductive toxicity:
May cause harm to the unborn child. Possible risk of impaired fertility. (Tetraethylene glycol dimethyl ether)

STOT-single exposure:
There are no data available on the mixture itself.

STOT-repeated exposure:
There are no data available on the mixture itself.

Aspiration hazard:
There are no data available on the mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity:
No information available.

Terrestrial toxicity:
No information available.

Effects in sewage plants:
No information available.

12.2. Persistence and degradability

Additional information:
Further ecological information: No information available.

12.3. Bioaccumulative potential

Accumulation / Evaluation:
No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Control report for waste code/ waste marking according to EAKV: Do not allow to enter into surface water or drains.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

08 03 17 *	waste printing toner containing dangerous substances

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10	packaging containing residues of or contaminated by dangerous substances

13.2. Additional information

No data available

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.
not relevant
14.2. UN proper shipping name
not relevant
14.3. Transport hazard class(es)
not relevant
14.4. Packing group
not relevant
14.5. Environmental hazards
not relevant

14.6. Special precautions for user

not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not relevant

Additional information:

No dangerous good in sense of these transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU legislation

No data available

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

§ 5 MuSchRiV
§ 22 JArbSchG
§ 4 MuSchRiV

Water hazard class (WGK)

WGK:

1 - schwach wassergefährdend

Source:

Self-classification

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information

No data available

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

See overview table at www.euphrac.eu

16.3. Key literature references and sources for data

No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H360	May damage fertility or the unborn child.

16.6. Training advice

No data available

16.7. Additional information

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.
TÜV SÜD Industrie Service GmbH
Department Environmental Service
Westendstraße 199
80686 Munich - Germany
-
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
-
Importer/Only Representative :
Roland DG Benelux NV

Manufacturer:
Roland DG Corporation
1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi,
Shizuoka-ken, 431-2103
JAPAN
Telefon: + 81-53-484-1224
Telefax: + 81-53-484-1226

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

ECO-SOL MAX2, ESL4-4YE

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

Inkjet Printing
Identified uses: Inkjet Printing
for professional use only
Uses advised against -

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Roland DG Benelux NV
Bell-Telephonelaan 2G
B-2440 Geel
Belgium

Telephone: +32 14 57 59 11

E-mail: info@rolanddg.be

Website: www.rolanddg.be

E-mail (competent person): info@rolanddg.be

1.4. Emergency telephone number

24h: +32 70 245 245 (Centre Antipoisons Belge - Belgisch Antigifcentrum, BE), +31 30 274 88 88 (Nationaal Vergiftigingen Informatie Centrum, Utrecht, NL) , +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

GHS08
Health hazard

GHS05
Corrosion

Signal word: Danger

Hazard components for labelling:

bis(2-(2-methoxyethoxy)ethyl) ether; ?-butyrolactone

hazard statements for health hazards	
H315	Causes skin irritation.
H318	Causes serious eye damage.
H360	May damage fertility or the unborn child.

Precautionary statements Response	
P302 + P352.1	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P362	Take off contaminated clothing.

2.3. Other hazards

Adverse physicochemical effects:
This material is combustible, but will not ignite readily.

Adverse human health effects and symptoms:
No known significant effects or critical hazards.

Adverse environmental effects:
No known significant effects or critical hazards.

Other adverse effects:
No known significant effects or critical hazards.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 112-36-7 **EC No.:** 203-963-7 **REACH No.:** 01-2119969946-13-0000	**bis(2-ethoxyethyl) ether** Skin Irrit. 2 **Warning** H315	40 – 50 Wt %
CAS No.: 96-48-0 **EC No.:** 202-509-5	**?-butyrolactone** Eye Dam. 1, STOT SE 3, Acute Tox. 4 **Danger** H302-H318-H336	< 20 Wt %
CAS No.: 143-24-8 **EC No.:** 205-594-7	**bis(2-(2-methoxyethoxy)ethyl) ether** Repr. 1B **Danger** H360	10 – 20 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:
Provide fresh air.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Consult physician immediately.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion:
Do NOT induce vomiting. Consult physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray, Carbon dioxide (CO2), Foam, Dry extinguishing powder

5.2. Special hazards arising from the substance or mixture

No data available

5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

5.4. Additional information

No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

See protective measures under point 7 and 8.
Provide adequate ventilation.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
Treat the recovered material as prescribed in the section on waste disposal.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Disposal: see section 13
Personal protection equipment: see section 8

6.5. Additional information

No data available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Use only in well-ventilated areas.
Handle and open container with care.
All work processes must always be designed so that the following is as low as possible: Inhalation, Skin contact, Eye contact.
When using do not eat, drink, smoke, sniff.

Fire prevent measures:

Keep away from sources of ignition. - No smoking.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Keep/Store only in original container. Protect from sunlight.

Hints on storage assembly:

Do not store together with: Oxidising agent
Materials to avoid: Metal, Oxidising agent, Amines

Storage class: 10 – Combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)

Recommendation:

Inkjet Printing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

No data available

8.1.2. biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8	22 mg/m³	① DNEL worker ② DNEL long-term inhalative (systemic)

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:

Eye protection: not required.

Skin protection:

Hand protection: Hand protection: not required.

Respiratory protection:

Respiratory protection necessary at: insufficient ventilation, insufficient exhaust.

Other protection measures:

Body protection: not required.

General health and safety measures: Thorough skin-cleansing after handling the product. Wash contaminated clothing prior to re-use. Avoid contact with skin, eyes and clothes.

8.2.3. Environmental exposure controls

Discharge into the environment must be avoided.

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: liquid
Colour: yellow
Odour: characteristic
Odour threshold: not determined

Safety relevant basis data

parameter		at °C	Method	Remark
pH	*not determined*		No data available	
Melting point/freezing point	*not determined*		No data available	
Freezing point	*not determined*			
Initial boiling point and boiling range	*not determined*		No data available	
Decomposition temperature (°C):	*not determined*			
Flash point	71 °C			
Evaporation rate	*not determined*			
Ignition temperature in °C	*not determined*			
Upper/lower flammability or explosive limits	0.3 – 16 Vol-%		as gamma-Butyrolactone	
Vapour pressure	*not determined*		No data available	
Vapour density	*not determined*			
Density	*not determined*		No data available	
Bulk density	*not determined*			

parameter		at °C	Method	Remark
Water solubility (g/L)	easily soluble			
Partition coefficient: n-octanol/ water	*not determined*		No data availa ble	
Dynamic viscosity	< 5 mPa*s	20 °C	No data availa ble	
Kinematic viscosity	*not determined*			

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid
Heat
Frost

10.5. Incompatible materials
Oxidising agent

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LD_{50} oral:** =1,582 mg/kg (Rat) **LC_{50} inhalative:** >5.1 ppmV 4 h
143-24-8	bis(2-(2-methoxyethoxy)ethyl) ether	**LD_{50} oral:** =3,850 mg/kg (Rat)

Acute oral toxicity:
There are no data available on the mixture itself.

Acute dermal toxicity:
There are no data available on the mixture itself.

Acute inhalation toxicity:
There are no data available on the mixture itself.

Skin corrosion/irritation:
There are no data available on the mixture itself.

Eye damage/irritation:
There are no data available on the mixture itself.

Respiratory or skin sensitisation:
not sensitising.

Germ cell mutagenicity:
No experimental indications of in vivo mutagenicity exist.

Carcinogenicity:
No indication of human carcinogenicity.

Reproductive toxicity:
May cause harm to the unborn child. Possible risk of impaired fertility. (Tetraethylene glycol dimethyl ether)

STOT-single exposure:
There are no data available on the mixture itself.

STOT-repeated exposure:
There are no data available on the mixture itself.

Aspiration hazard:
There are no data available on the mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity:
No information available.

Terrestrial toxicity:
No information available.

Effects in sewage plants:
No information available.

12.2. Persistence and degradability

Additional information:
Further ecological information: No information available.

12.3. Bioaccumulative potential

Accumulation / Evaluation:
No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Control report for waste code/ waste marking according to EAKV: Do not allow to enter into surface water or drains.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

08 03 17 *	waste printing toner containing dangerous substances

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10	packaging containing residues of or contaminated by dangerous substances

13.2. Additional information

No data available

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.
not relevant
14.2. UN proper shipping name
not relevant
14.3. Transport hazard class(es)
not relevant
14.4. Packing group
not relevant
14.5. Environmental hazards
not relevant

14.6. Special precautions for user

not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not relevant

Additional information:

No dangerous good in sense of these transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU legislation

No data available

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

§ 5 MuSchRiV
§ 22 JArbSchG
§ 4 MuSchRiV

Water hazard class (WGK)

WGK:

1 - schwach wassergefährdend

Source:

Self-classification

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information

No data available

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

See overview table at www.euphrac.eu

16.3. Key literature references and sources for data

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures
Commission Regulation (EC) No 790/2009 of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008
Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations
Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
-

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H360	May damage fertility or the unborn child.

16.6. Training advice

No data available

16.7. Additional information

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.
TÜV SÜD Industrie Service GmbH
Department Environmental Service
Westendstraße 199
80686 Munich - Germany
-
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
-
Importer/Only Representative :
Roland DG Benelux NV

Manufacturer:
Roland DG Corporation
1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi,
Shizuoka-ken, 431-2103
JAPAN
Telefon: + 81-53-484-1224
Telefax: + 81-53-484-1226

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

ECO-SOL MAX2, ESL4-4BK

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

Inkjet Printing
Identified uses: Inkjet Printing
for professional use only
Uses advised against -

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Roland DG Benelux NV
Bell-Telephonelaan 2G
B-2440 Geel
Belgium

Telephone: +32 14 57 59 11

E-mail: info@rolanddg.be

Website: www.rolanddg.be

E-mail (competent person): info@rolanddg.be

1.4. Emergency telephone number

24h: +32 70 245 245 (Centre Antipoisons Belge - Belgisch Antigifcentrum, BE), +31 30 274 88 88 (Nationaal Vergiftigingen Informatie Centrum, Utrecht, NL) , +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

GHS08
Health hazard

GHS05
Corrosion

Signal word: Danger

Hazard components for labelling:

bis(2-(2-methoxyethoxy)ethyl) ether; ?-butyrolactone

hazard statements for health hazards	
H315	Causes skin irritation.
H318	Causes serious eye damage.
H360	May damage fertility or the unborn child.

Precautionary statements	Response
P302 + P352.1	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P362	Take off contaminated clothing.

2.3. Other hazards

Adverse physicochemical effects:
This material is combustible, but will not ignite readily.

Adverse human health effects and symptoms:
No known significant effects or critical hazards.

Adverse environmental effects:
No known significant effects or critical hazards.

Other adverse effects:
No known significant effects or critical hazards.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 112-36-7 **EC No.:** 203-963-7 **REACH No.:** 01-2119969946-13-0000	**bis(2-ethoxyethyl) ether** Skin Irrit. 2 **Warning** H315	40 – 50 Wt %
CAS No.: 96-48-0 **EC No.:** 202-509-5	**?-butyrolactone** Eye Dam. 1, STOT SE 3, Acute Tox. 4 **Danger** H302-H318-H336	< 20 Wt %
CAS No.: 143-24-8 **EC No.:** 205-594-7	**bis(2-(2-methoxyethoxy)ethyl) ether** Repr. 1B **Danger** H360	10 – 20 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:
Provide fresh air.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Consult physician immediately.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion:
Do NOT induce vomiting. Consult physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray, Carbon dioxide (CO2), Foam, Dry extinguishing powder

5.2. Special hazards arising from the substance or mixture

No data available

5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

5.4. Additional information

No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

See protective measures under point 7 and 8.
Provide adequate ventilation.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
Treat the recovered material as prescribed in the section on waste disposal.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Disposal: see section 13
Personal protection equipment: see section 8

6.5. Additional information

No data available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Use only in well-ventilated areas.
Handle and open container with care.
All work processes must always be designed so that the following is as low as possible: Inhalation, Skin contact, Eye contact.
When using do not eat, drink, smoke, sniff.

Fire prevent measures:

Keep away from sources of ignition. - No smoking.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Keep/Store only in original container. Protect from sunlight.

Hints on storage assembly:

Do not store together with: Oxidising agent
Materials to avoid: Metal, Oxidising agent, Amines

Storage class: 10 – Combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)

Recommendation:

Inkjet Printing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

No data available

8.1.2. biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8	22 mg/m³	① DNEL worker ② DNEL long-term inhalative (systemic)

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:

Eye protection: not required.

Skin protection:

Hand protection: Hand protection: not required.

Respiratory protection:

Respiratory protection necessary at: insufficient ventilation, insufficient exhaust.

Other protection measures:

Body protection: not required.

General health and safety measures: Thorough skin-cleansing after handling the product. Wash contaminated clothing prior to re-use. Avoid contact with skin, eyes and clothes.

8.2.3. Environmental exposure controls

Discharge into the environment must be avoided.

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: liquid
Colour: black
Odour: characteristic
Odour threshold: not determined

Safety relevant basis data

parameter		at °C	Method	Remark
pH	*not determined*		No data availa ble	
Melting point/freezing point	*not determined*		No data availa ble	
Freezing point	*not determined*			
Initial boiling point and boiling range	*not determined*		No data availa ble	
Decomposition temperature (°C):	*not determined*			
Flash point	71 °C			
Evaporation rate	*not determined*			
Ignition temperature in °C	*not determined*			
Upper/lower flammability or explosive limits	0.3 – 16 Vol-%		as gamma-Buty rolactone	
Vapour pressure	*not determined*		No data availa ble	
Vapour density	*not determined*			
Density	*not determined*		No data availa ble	
Bulk density	*not determined*			

parameter		at °C	Method	Remark
Water solubility (g/L)	easily soluble			
Partition coefficient: n-octanol/ water	*not determined*		No data availa ble	
Dynamic viscosity	*not determined*		No data availa ble	
Kinematic viscosity	*not determined*	40 °C		

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
The product is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability
The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No known hazardous reactions.

10.4. Conditions to avoid
Frost , Heat

10.5. Incompatible materials
Oxidising agent

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LD_{50} oral:** =1,582 mg/kg (Rat) **LC_{50} inhalative:** >5.1 ppmV 4 h
143-24-8	bis(2-(2-methoxyethoxy)ethyl) ether	**LD_{50} oral:** =3,850 mg/kg (Rat)

Acute oral toxicity:
There are no data available on the mixture itself.

Acute dermal toxicity:
There are no data available on the mixture itself.

Acute inhalation toxicity:
There are no data available on the mixture itself.

Skin corrosion/irritation:
Irritant effect on the skin: Not an irritant. (Methode: Rabbit OECD 404)*

Eye damage/irritation:
Irritant effect on the eye: slightly irritant but not relevant for classification. (Methode: Rabbit OECD 405)*

Respiratory or skin sensitisation:
No experimental indications of in vivo mutagenicity exist.

Germ cell mutagenicity:
No indication of human carcinogenicity.

Carcinogenicity:
No indication of human carcinogenicity.

Reproductive toxicity:
May cause harm to the unborn child. Possible risk of impaired fertility. (Tetraethylene glycol dimethyl ether)

STOT-single exposure:
There are no data available on the mixture itself.

STOT-repeated exposure:
There are no data available on the mixture itself.

Aspiration hazard:
There are no data available on the mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LC_{50}:** =56 mg/l 4 d

Aquatic toxicity:
No information available.

Terrestrial toxicity:
No information available.

Effects in sewage plants:
No information available.

12.2. Persistence and degradability

CAS No.	Substance name	Biodegradation	Remark
112-36-7	bis(2-ethoxyethyl) ether	No	
96-48-0	?-butyrolactone	Yes, rapidly	
143-24-8	bis(2-(2-methoxyethoxy)ethyl) ether	Yes, rapidly	

Additional information:
Further ecological information: No information available.

12.3. Bioaccumulative potential

Accumulation / Evaluation:
No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

CAS No.	Substance name	Results of PBT and vPvB assessment
112-36-7	bis(2-ethoxyethyl) ether	—
96-48-0	?-butyrolactone	—
143-24-8	bis(2-(2-methoxyethoxy)ethyl) ether	—

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Control report for waste code/ waste marking according to EAKV: Do not allow to enter into surface water or drains.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

08 03 17 *	waste printing toner containing dangerous substances

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10	packaging containing residues of or contaminated by dangerous substances

13.2. Additional information

No data available

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.

not relevant

14.2. UN proper shipping name
not relevant

14.3. Transport hazard class(es)
not relevant

14.4. Packing group
not relevant

14.5. Environmental hazards
not relevant

14.6. Special precautions for user
not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not relevant

Additional information:
No dangerous good in sense of these transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU legislation
No data available

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation
§ 5 MuSchRiV
§ 22 JArbSchG
§ 4 MuSchRiV

Water hazard class (WGK)

WGK:
1 - schwach wassergefährdend

Source:
Self-classification

15.2. Chemical Safety Assessment
Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information
No data available

SECTION 16: Other information

16.1. Indication of changes
No data available

16.2. Abbreviations and acronyms
See overview table at www.euphrac.eu

16.3. Key literature references and sources for data
No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H360	May damage fertility or the unborn child.

16.6. Training advice

No data available

16.7. Additional information

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.
TÜV SÜD Industrie Service GmbH
Department Environmental Service
Westendstraße 199
80686 Munich - Germany
-
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
-
Importer/Only Representative :
Roland DG Benelux NV

Manufacturer:
Roland DG Corporation
1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi,
Shizuoka-ken, 431-2103
JAPAN
Telefon: + 81-53-484-1224
Telefax: + 81-53-484-1226

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

ECO-SOL MAX2, ESL4-4LC

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

Inkjet Printing
Identified uses: Inkjet Printing
for professional use only
Uses advised against -

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Roland DG Benelux NV
Bell-Telephonelaan 2G
B-2440 Geel
Belgium

Telephone: +32 14 57 59 11

E-mail: info@rolanddg.be

Website: www.rolanddg.be

E-mail (competent person): info@rolanddg.be

1.4. Emergency telephone number

24h: +32 70 245 245 (Centre Antipoisons Belge - Belgisch Antigifcentrum, BE), +31 30 274 88 88 (Nationaal Vergiftigingen Informatie Centrum, Utrecht, NL) , +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

GHS08
Health hazard

GHS05
Corrosion

Signal word: Danger

Hazard components for labelling:

bis(2-(2-methoxyethoxy)ethyl) ether; ?-butyrolactone

hazard statements for health hazards	
H315	Causes skin irritation.
H318	Causes serious eye damage.
H360	May damage fertility or the unborn child.

Precautionary statements	Response
P302 + P352.1	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P362	Take off contaminated clothing.

2.3. Other hazards

Adverse physicochemical effects:
This material is combustible, but will not ignite readily.

Adverse human health effects and symptoms:
No known significant effects or critical hazards.

Adverse environmental effects:
No known significant effects or critical hazards.

Other adverse effects:
No known significant effects or critical hazards.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 112-36-7 **EC No.:** 203-963-7 **REACH No.:** 01-2119969946-13-0000	**bis(2-ethoxyethyl) ether** Skin Irrit. 2 **Warning** H315	40 – 50 Wt %
CAS No.: 96-48-0 **EC No.:** 202-509-5	**?-butyrolactone** Eye Dam. 1, STOT SE 3, Acute Tox. 4 **Danger** H302-H318-H336	< 20 Wt %
CAS No.: 143-24-8 **EC No.:** 205-594-7	**bis(2-(2-methoxyethoxy)ethyl) ether** Repr. 1B **Danger** H360	10 – 20 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:
Provide fresh air.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Consult physician immediately.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion:
Do NOT induce vomiting. Consult physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray, Carbon dioxide (CO2), Foam, Dry extinguishing powder

5.2. Special hazards arising from the substance or mixture

No data available

5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

5.4. Additional information

No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

See protective measures under point 7 and 8.
Provide adequate ventilation.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
Treat the recovered material as prescribed in the section on waste disposal.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Disposal: see section 13
Personal protection equipment: see section 8

6.5. Additional information

No data available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Use only in well-ventilated areas.
Handle and open container with care.
All work processes must always be designed so that the following is as low as possible: Inhalation, Skin contact, Eye contact.
When using do not eat, drink, smoke, sniff.

Fire prevent measures:

Keep away from sources of ignition. - No smoking.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Keep/Store only in original container. Protect from sunlight.

Hints on storage assembly:

Do not store together with: Oxidising agent
Materials to avoid: Metal, Oxidising agent, Amines

Storage class: 10 – Combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)

Recommendation:

Inkjet Printing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

No data available

8.1.2. biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8	22 mg/m³	① DNEL worker ② DNEL long-term inhalative (systemic)

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:

Eye protection: not required.

Skin protection:

Hand protection: Hand protection: not required.

Respiratory protection:

Respiratory protection necessary at: insufficient ventilation, insufficient exhaust.

Other protection measures:

Body protection: not required.

General health and safety measures: Thorough skin-cleansing after handling the product. Wash contaminated clothing prior to re-use. Avoid contact with skin, eyes and clothes.

8.2.3. Environmental exposure controls

Discharge into the environment must be avoided.

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: liquid
Colour: blue
Odour: characteristic
Odour threshold: not determined

Safety relevant basis data

parameter		at °C	Method	Remark
pH	*not determined*		No data available	
Melting point/freezing point	*not determined*		No data available	
Freezing point	*not determined*			
Initial boiling point and boiling range	*not determined*		No data available	
Decomposition temperature (°C):	*not determined*			
Flash point	71 °C			
Evaporation rate	*not determined*			
Ignition temperature in °C	*not determined*			
Upper/lower flammability or explosive limits	0.3 – 16 Vol-%		as gamma-Butyrolactone	
Vapour pressure	*not determined*		No data available	
Vapour density	*not determined*			
Density	*not determined*		No data available	
Bulk density	*not determined*			

parameter		at °C	Method	Remark
Water solubility (g/L)	easily soluble			
Partition coefficient: n-octanol/ water	*not determined*		No data availa ble	
Dynamic viscosity	< 5 mPa*s	20 °C	No data availa ble	
Kinematic viscosity	*not determined*			

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid
Heat
Frost

10.5. Incompatible materials
Oxidising agent

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LD_{50} oral:** =1,582 mg/kg (Rat) **LC_{50} inhalative:** >5.1 ppmV 4 h
143-24-8	bis(2-(2-methoxyethoxy)ethyl) ether	**LD_{50} oral:** =3,850 mg/kg (Rat)

Acute oral toxicity:
There are no data available on the mixture itself.

Acute dermal toxicity:
There are no data available on the mixture itself.

Acute inhalation toxicity:
There are no data available on the mixture itself.

Skin corrosion/irritation:
There are no data available on the mixture itself.

Eye damage/irritation:
There are no data available on the mixture itself.

Respiratory or skin sensitisation:
not sensitising.

Germ cell mutagenicity:
No experimental indications of in vivo mutagenicity exist.

Carcinogenicity:
No indication of human carcinogenicity.

Reproductive toxicity:
May cause harm to the unborn child. Possible risk of impaired fertility. (Tetraethylene glycol dimethyl ether)

STOT-single exposure:
There are no data available on the mixture itself.

STOT-repeated exposure:
There are no data available on the mixture itself.

Aspiration hazard:
There are no data available on the mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity:
No information available.

Terrestrial toxicity:
No information available.

Effects in sewage plants:
No information available.

12.2. Persistence and degradability

Additional information:
Further ecological information: No information available.

12.3. Bioaccumulative potential

Accumulation / Evaluation:
No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Control report for waste code/ waste marking according to EAKV: Do not allow to enter into surface water or drains.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

08 03 17 *	waste printing toner containing dangerous substances

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10	packaging containing residues of or contaminated by dangerous substances

13.2. Additional information

No data available

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.
not relevant
14.2. UN proper shipping name
not relevant
14.3. Transport hazard class(es)
not relevant
14.4. Packing group
not relevant
14.5. Environmental hazards
not relevant

14.6. Special precautions for user

not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not relevant

Additional information:

No dangerous good in sense of these transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU legislation

No data available

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

§ 5 MuSchRiV
§ 22 JArbSchG
§ 4 MuSchRiV

Water hazard class (WGK)

WGK:

1 - schwach wassergefährdend

Source:

Self-classification

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information

No data available

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

See overview table at www.euphrac.eu

16.3. Key literature references and sources for data

No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H360	May damage fertility or the unborn child.

16.6. Training advice

No data available

16.7. Additional information

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.
TÜV SÜD Industrie Service GmbH
Department Environmental Service
Westendstraße 199
80686 Munich - Germany
-
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
-
Importer/Only Representative :
Roland DG Benelux NV

Manufacturer:
Roland DG Corporation
1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi,
Shizuoka-ken, 431-2103
JAPAN
Telefon: + 81-53-484-1224
Telefax: + 81-53-484-1226

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

ECO-SOL MAX2, ESL4-4LM

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

Inkjet Printing
Identified uses: Inkjet Printing
for professional use only
Uses advised against -

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Roland DG Benelux NV
Bell-Telephonelaan 2G
B-2440 Geel
Belgium

Telephone: +32 14 57 59 11

E-mail: info@rolanddg.be

Website: www.rolanddg.be

E-mail (competent person): info@rolanddg.be

1.4. Emergency telephone number

24h: +32 70 245 245 (Centre Antipoisons Belge - Belgisch Antigifcentrum, BE), +31 30 274 88 88 (Nationaal Vergiftigingen Informatie Centrum, Utrecht, NL) , +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

GHS08
Health hazard

GHS05
Corrosion

Signal word: Danger

Hazard components for labelling:

bis(2-(2-methoxyethoxy)ethyl) ether; ?-butyrolactone

hazard statements for health hazards	
H315	Causes skin irritation.
H318	Causes serious eye damage.
H360	May damage fertility or the unborn child.

Precautionary statements	Response
P302 + P352.1	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P362	Take off contaminated clothing.

2.3. Other hazards

Adverse physicochemical effects:
This material is combustible, but will not ignite readily.

Adverse human health effects and symptoms:
No known significant effects or critical hazards.

Adverse environmental effects:
No known significant effects or critical hazards.

Other adverse effects:
No known significant effects or critical hazards.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 112-36-7 **EC No.:** 203-963-7 **REACH No.:** 01-2119969946-13-0000	**bis(2-ethoxyethyl) ether** Skin Irrit. 2 **Warning** H315	40 – 50 Wt %
CAS No.: 96-48-0 **EC No.:** 202-509-5	**?-butyrolactone** Eye Dam. 1, STOT SE 3, Acute Tox. 4 **Danger** H302-H318-H336	< 20 Wt %
CAS No.: 143-24-8 **EC No.:** 205-594-7	**bis(2-(2-methoxyethoxy)ethyl) ether** Repr. 1B **Danger** H360	10 – 20 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:
Provide fresh air.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Consult physician immediately.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion:
Do NOT induce vomiting. Consult physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray, Carbon dioxide (CO2), Foam, Dry extinguishing powder

5.2. Special hazards arising from the substance or mixture

No data available

5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

5.4. Additional information

No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

See protective measures under point 7 and 8.
Provide adequate ventilation.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
Treat the recovered material as prescribed in the section on waste disposal.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Disposal: see section 13
Personal protection equipment: see section 8

6.5. Additional information

No data available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Use only in well-ventilated areas.
Handle and open container with care.
All work processes must always be designed so that the following is as low as possible: Inhalation, Skin contact, Eye contact.
When using do not eat, drink, smoke, sniff.

Fire prevent measures:

Keep away from sources of ignition. - No smoking.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Keep/Store only in original container. Protect from sunlight.

Hints on storage assembly:

Do not store together with: Oxidising agent
Materials to avoid: Metal, Oxidising agent, Amines

Storage class: 10 – Combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)

Recommendation:

Inkjet Printing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

No data available

8.1.2. biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8	22 mg/m³	① DNEL worker ② DNEL long-term inhalative (systemic)

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:

Eye protection: not required.

Skin protection:

Hand protection: Hand protection: not required.

Respiratory protection:

Respiratory protection necessary at: insufficient ventilation, insufficient exhaust.

Other protection measures:

Body protection: not required.

General health and safety measures: Thorough skin-cleansing after handling the product. Wash contaminated clothing prior to re-use. Avoid contact with skin, eyes and clothes.

8.2.3. Environmental exposure controls

Discharge into the environment must be avoided.

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: liquid
Colour: red
Odour: characteristic
Odour threshold: not determined

Safety relevant basis data

parameter		at °C	Method	Remark
pH	*not determined*		No data available	
Melting point/freezing point	*not determined*		No data available	
Freezing point	*not determined*			
Initial boiling point and boiling range	*not determined*		No data available	
Decomposition temperature (°C):	*not determined*			
Flash point	71 °C			
Evaporation rate	*not determined*			
Ignition temperature in °C	*not determined*			
Upper/lower flammability or explosive limits	0.3 – 16 Vol-%		as gamma-Butyrolactone	
Vapour pressure	*not determined*		No data available	
Vapour density	*not determined*			
Density	*not determined*		No data available	
Bulk density	*not determined*			

parameter		at °C	Method	Remark
Water solubility (g/L)	easily soluble			
Partition coefficient: n-octanol/ water	*not determined*		No data availa ble	
Dynamic viscosity	< 5 mPa*s	20 °C	No data availa ble	
Kinematic viscosity	*not determined*			

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid
Heat
Frost

10.5. Incompatible materials
Oxidising agent

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LD_{50} oral:** =1,582 mg/kg (Rat) **LC_{50} inhalative:** >5.1 ppmV 4 h
143-24-8	bis(2-(2-methoxyethoxy)ethyl) ether	**LD_{50} oral:** =3,850 mg/kg (Rat)

Acute oral toxicity:
There are no data available on the mixture itself.

Acute dermal toxicity:
There are no data available on the mixture itself.

Acute inhalation toxicity:
There are no data available on the mixture itself.

Skin corrosion/irritation:
There are no data available on the mixture itself.

Eye damage/irritation:
There are no data available on the mixture itself.

Respiratory or skin sensitisation:
not sensitising.

Germ cell mutagenicity:
No experimental indications of in vivo mutagenicity exist.

Carcinogenicity:
No indication of human carcinogenicity.

Reproductive toxicity:
May cause harm to the unborn child. Possible risk of impaired fertility. (Tetraethylene glycol dimethyl ether)

STOT-single exposure:
There are no data available on the mixture itself.

STOT-repeated exposure:
There are no data available on the mixture itself.

Aspiration hazard:
There are no data available on the mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity:
No information available.

Terrestrial toxicity:
No information available.

Effects in sewage plants:
No information available.

12.2. Persistence and degradability

Additional information:
Further ecological information: No information available.

12.3. Bioaccumulative potential

Accumulation / Evaluation:
No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Control report for waste code/ waste marking according to EAKV: Do not allow to enter into surface water or drains.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

08 03 17 *	waste printing toner containing dangerous substances

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10	packaging containing residues of or contaminated by dangerous substances

13.2. Additional information

No data available

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.
not relevant
14.2. UN proper shipping name
not relevant
14.3. Transport hazard class(es)
not relevant
14.4. Packing group
not relevant
14.5. Environmental hazards
not relevant

14.6. Special precautions for user

not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not relevant

Additional information:

No dangerous good in sense of these transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU legislation

No data available

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

§ 5 MuSchRiV
§ 22 JArbSchG
§ 4 MuSchRiV

Water hazard class (WGK)

WGK:

1 - schwach wassergefährdend

Source:

Self-classification

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information

No data available

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

See overview table at www.euphrac.eu

16.3. Key literature references and sources for data

No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H360	May damage fertility or the unborn child.

16.6. Training advice

No data available

16.7. Additional information

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.
TÜV SÜD Industrie Service GmbH
Department Environmental Service
Westendstraße 199
80686 Munich - Germany
-
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
--
Importer/Only Representative :
Roland DG Benelux NV

Manufacturer:
Roland DG Corporation
1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi,
Shizuoka-ken, 431-2103
JAPAN
Telefon: + 81-53-484-1224
Telefax: + 81-53-484-1226

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

ECO-SOL MAX2, ESL4-4LK

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

Inkjet Printing
Identified uses: Inkjet Printing
for professional use only
Uses advised against -

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Roland DG Benelux NV
Bell-Telephonelaan 2G
B-2440 Geel
Belgium
Telephone: +32 14 57 59 11
E-mail: info@rolanddg.be
Website: www.rolanddg.be
E-mail (competent person): info@rolanddg.be

1.4. Emergency telephone number

24h: +32 70 245 245 (Centre Antipoisons Belge - Belgisch Antigifcentrum, BE), +31 30 274 88 88 (Nationaal Vergiftigingen Informatie Centrum, Utrecht, NL) , +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

GHS08
Health hazard

GHS05
Corrosion

Signal word: Danger

Hazard components for labelling:

bis(2-(2-methoxyethoxy)ethyl) ether; ?-butyrolactone

hazard statements for health hazards	
H315	Causes skin irritation.
H318	Causes serious eye damage.
H360	May damage fertility or the unborn child.

Precautionary statements	Response
P302 + P352.1	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P362	Take off contaminated clothing.

2.3. Other hazards

Adverse physicochemical effects:
This material is combustible, but will not ignite readily.

Adverse human health effects and symptoms:
No known significant effects or critical hazards.

Adverse environmental effects:
No known significant effects or critical hazards.

Other adverse effects:
No known significant effects or critical hazards.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 112-36-7 **EC No.:** 203-963-7 **REACH No.:** 01-2119969946-13-0000	**bis(2-ethoxyethyl) ether** Skin Irrit. 2 **Warning** H315	40 – 50 Wt %
CAS No.: 96-48-0 **EC No.:** 202-509-5	**?-butyrolactone** Eye Dam. 1, STOT SE 3, Acute Tox. 4 **Danger** H302-H318-H336	< 20 Wt %
CAS No.: 143-24-8 **EC No.:** 205-594-7	**bis(2-(2-methoxyethoxy)ethyl) ether** Repr. 1B **Danger** H360	10 – 20 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:
Provide fresh air.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Consult physician immediately.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion:
Do NOT induce vomiting. Consult physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray, Carbon dioxide (CO2), Foam, Dry extinguishing powder

5.2. Special hazards arising from the substance or mixture

No data available

5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

5.4. Additional information

No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

See protective measures under point 7 and 8.
Provide adequate ventilation.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
Treat the recovered material as prescribed in the section on waste disposal.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Disposal: see section 13
Personal protection equipment: see section 8

6.5. Additional information

No data available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Use only in well-ventilated areas.
Handle and open container with care.
All work processes must always be designed so that the following is as low as possible: Inhalation, Skin contact, Eye contact.
When using do not eat, drink, smoke, sniff.

Fire prevent measures:

Keep away from sources of ignition. - No smoking.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Keep/Store only in original container. Protect from sunlight.

Hints on storage assembly:

Do not store together with: Oxidising agent
Materials to avoid: Metal, Oxidising agent, Amines

Storage class: 10 – Combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)

Recommendation:

Inkjet Printing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

No data available

8.1.2. biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8	22 mg/m³	① DNEL worker ② DNEL long-term inhalative (systemic)

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:

Eye protection: not required.

Skin protection:

Hand protection: Hand protection: not required.

Respiratory protection:

Respiratory protection necessary at: insufficient ventilation, insufficient exhaust.

Other protection measures:

Body protection: not required.

General health and safety measures: Thorough skin-cleansing after handling the product. Wash contaminated clothing prior to re-use. Avoid contact with skin, eyes and clothes.

8.2.3. Environmental exposure controls

Discharge into the environment must be avoided.

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: liquid
Colour: black
Odour: characteristic
Odour threshold: not determined

Safety relevant basis data

parameter		at °C	Method	Remark
pH	*not determined*		No data availa ble	
Melting point/freezing point	*not determined*		No data availa ble	
Freezing point	*not determined*			
Initial boiling point and boiling range	*not determined*		No data availa ble	
Decomposition temperature (°C):	*not determined*			
Flash point	71 °C			
Evaporation rate	*not determined*			
Ignition temperature in °C	*not determined*			
Upper/lower flammability or explosive limits	0.3 – 16 Vol-%		as gamma-Buty rolactone	
Vapour pressure	*not determined*		No data availa ble	
Vapour density	*not determined*			
Density	*not determined*		No data availa ble	
Bulk density	*not determined*			

parameter		at °C	Method	Remark
Water solubility (g/L)	easily soluble			
Partition coefficient: n-octanol/ water	*not determined*		No data availa ble	
Dynamic viscosity	*not determined*		No data availa ble	
Kinematic viscosity	*not determined*			

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid
Heat
Frost

10.5. Incompatible materials
Oxidising agent

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LD_{50} oral:** =1,582 mg/kg (Rat) **LC_{50} inhalative:** >5.1 ppmV 4 h
143-24-8	bis(2-(2-methoxyethoxy)ethyl) ether	**LD_{50} oral:** =3,850 mg/kg (Rat)

Acute oral toxicity:
There are no data available on the mixture itself.

Acute dermal toxicity:
There are no data available on the mixture itself.

Acute inhalation toxicity:
There are no data available on the mixture itself.

Skin corrosion/irritation:
There are no data available on the mixture itself.

Eye damage/irritation:
There are no data available on the mixture itself.

Respiratory or skin sensitisation:
not sensitising.

Germ cell mutagenicity:
No experimental indications of in vivo mutagenicity exist.

Carcinogenicity:
No indication of human carcinogenicity.

Reproductive toxicity:
May cause harm to the unborn child. Possible risk of impaired fertility. (Tetraethylene glycol dimethyl ether)

STOT-single exposure:
There are no data available on the mixture itself.

STOT-repeated exposure:
There are no data available on the mixture itself.

Aspiration hazard:
There are no data available on the mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity:
No information available.

Terrestrial toxicity:
No information available.

Effects in sewage plants:
No information available.

12.2. Persistence and degradability

Additional information:
Further ecological information: No information available.

12.3. Bioaccumulative potential

Accumulation / Evaluation:
No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Control report for waste code/ waste marking according to EAKV: Do not allow to enter into surface water or drains.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

08 03 17 *	waste printing toner containing dangerous substances

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10	packaging containing residues of or contaminated by dangerous substances

13.2. Additional information

No data available

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.
not relevant
14.2. UN proper shipping name
not relevant
14.3. Transport hazard class(es)
not relevant
14.4. Packing group
not relevant
14.5. Environmental hazards
not relevant

14.6. Special precautions for user

not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not relevant

Additional information:

No dangerous good in sense of these transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU legislation

No data available

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

§ 5 MuSchRiV
§ 22 JArbSchG
§ 4 MuSchRiV

Water hazard class (WGK)

WGK:

1 - schwach wassergefährdend

Source:

Self-classification

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information

No data available

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

No data available

16.3. Key literature references and sources for data

No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H360	May damage fertility or the unborn child.

16.6. Training advice

No data available

16.7. Additional information

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.
TÜV SÜD Industrie Service GmbH
Department Environmental Service
Westendstraße 199
80686 Munich - Germany
-
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
-
Importer/Only Representative :
Roland DG Benelux NV

Manufacturer:
Roland DG Corporation
1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi,
Shizuoka-ken, 431-2103
JAPAN
Telefon: + 81-53-484-1224
Telefax: + 81-53-484-1226

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

ECO-SOL MAX2, ESL4-MT

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

Inkjet Printing
Identified uses: Inkjet Printing
Restricted to professional users.
Uses advised against -

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Roland DG Benelux NV
Bell-Telephonelaan 2G
B-2440 Geel
Belgium

Telephone: +32 14 57 59 11

E-mail: info@rolanddg.be

Website: www.rolanddg.be

E-mail (competent person): info@rolanddg.be

1.4. Emergency telephone number

24h: +49 228 19240 (Giftnotruf Bonn), +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

GHS08
Health hazard

GHS05
Corrosion

Signal word: Danger

Hazard components for labelling:

bis(2-(2-methoxyethoxy)ethyl) ether; ?-butyrolactone

hazard statements for health hazards	
H315	Causes skin irritation.
H318	Causes serious eye damage.
H360	May damage fertility or the unborn child.

Precautionary statements	Response
P302 + P352.1	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P362	Take off contaminated clothing.

2.3. Other hazards

Adverse physicochemical effects:
This material is combustible, but will not ignite readily.

Adverse human health effects and symptoms:
No information available.

Adverse environmental effects:
No information available.

Other adverse effects:
No information available.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No. 1272/2008 [CLP]	Concen-tration
CAS No.: 112-36-7 **EC No.:** 203-963-7 **REACH No.:** 01-2119969946-13-0000	**bis(2-ethoxyethyl) ether** Skin Irrit. 2 **Warning** H315	> 70 – < 80 Wt %
CAS No.: 143-24-8 **EC No.:** 205-594-7	**bis(2-(2-methoxyethoxy)ethyl) ether** Repr. 1B **Danger** H360	> 10 – < 20 Wt %
CAS No.: 96-48-0 **EC No.:** 202-509-5	**?-butyrolactone** Eye Dam. 1, STOT SE 3, Acute Tox. 4 **Danger** H302-H318-H336	10 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:
Provide fresh air.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Consult physician immediately.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion:
Do NOT induce vomiting. Consult physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray, Carbon dioxide (CO2), Foam, Dry extinguishing powder

5.2. Special hazards arising from the substance or mixture

No information available.

5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

5.4. Additional information

No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

See protective measures under point 7 and 8.
Provide adequate ventilation.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions

Do not allow to enter into surface water or drains.
Treat the recovered material as prescribed in the section on waste disposal.

6.3. Methods and material for containment and cleaning up

For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Disposal: see section 13
Personal protection equipment: see section 8

6.5. Additional information

No data available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Use only in well-ventilated areas.
Handle and open container with care.
All work processes must always be designed so that the following is as low as possible: Inhalation, Skin contact, Eye contact.
When using do not eat, drink, smoke, sniff.

Fire prevent measures:

Keep away from sources of ignition. - No smoking.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Keep/Store only in original container. Protect from sunlight.

Hints on storage assembly:

Do not store together with: Oxidising agent
Materials to avoid: Metal, Oxidising agent, Amines

Storage class: 10 – Combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)

Recommendation:

Inkjet Printing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

No data available

8.1.2. biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8	22 mg/m³	① DNEL worker ② DNEL long-term inhalative (systemic)

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:

Eye glasses with side protection

Skin protection:

Recommended material: NBR (Nitrile rubber)

Respiratory protection:

Respiratory protection necessary at: insufficient ventilation, insufficient exhaust. Filtering device (full mask or mouthpiece) with filter:

Other protection measures:

Body protection: not required.
General health and safety measures: Thorough skin-cleansing after handling the product. Wash contaminated clothing prior to re-use. Avoid contact with skin, eyes and clothes.

8.2.3. Environmental exposure controls

Discharge into the environment must be avoided.

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: liquid
Colour: silver
Odour: characteristic
Odour threshold: No information available.

Safety relevant basis data

parameter		at °C	Method	remark
pH	*not determined*		No data available	
Melting point/freezing point	*not determined*		No data available	
Freezing point	*not determined*			
Initial boiling point and boiling range	*not determined*		No data available	
Decomposition temperature (°C):	*not determined*			
Flash point	78.7 °C			
Evaporation rate	*not determined*			
Ignition temperature in °C	*not determined*			
Upper/lower flammability or explosive limits	0.3 – 16 Vol-%			
Vapour pressure	*not determined*		No data available	
Vapour density	*not determined*			
Density	*not determined*		No data available	

parameter		at °C	Method	remark
Bulk density	*not determined*			
Water solubility (g/L)	slightly soluble			
Partition coefficient: n-octanol/ water	*not determined*		No data availa- ble	
Dynamic viscosity	< 5 mPa*s	20 °C	No data availa- ble	
Kinematic viscosity	*not determined*			

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability
The substance is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No known hazardous reactions.

10.4. Conditions to avoid
Keep away from heat.
Frost

10.5. Incompatible materials
Oxidising agent

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LD_{50} oral:** =1,582 mg/kg (Rat) **LC_{50} inhalative:** >5.1 ppmV 4 h

Acute oral toxicity:
There are no data available on the mixture itself.

Acute dermal toxicity:
There are no data available on the mixture itself.

Acute inhalation toxicity:
There are no data available on the mixture itself.

Skin corrosion/irritation:
Causes skin irritation.

Eye damage/irritation:
Causes serious eye damage.

Respiratory or skin sensitisation:
not sensitising.

Germ cell mutagenicity:
In vitro mutagenicity: Ames test negative.*

Carcinogenicity:
No indication of human carcinogenicity.

Reproductive toxicity:
May cause harm to the unborn child. Possible risk of impaired fertility.

STOT-single exposure:
There are no data available on the mixture itself.

STOT-repeated exposure:
There are no data available on the mixture itself.

Aspiration hazard:
There are no data available on the mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity:
No information available.

Terrestrial toxicity:
No information available.

Effects in sewage plants:
No information available.

Assessment/classification:
There are no data available on the mixture itself.

12.2. Persistence and degradability

Additional information:
There are no data available on the mixture itself.

12.3. Bioaccumulative potential

Accumulation / Evaluation:
There are no data available on the mixture itself.

12.4. Mobility in soil

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

CAS No.	Substance name	Results of PBT and vPvB assessment
	Nicht eingestufte Stoffe	—

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Control report for waste code/ waste marking according to EAKV: Do not allow to enter into surface water or drains.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

08 03 17 *	waste printing toner containing dangerous substances

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10	packaging containing residues of or contaminated by dangerous substances

13.2. Additional information

No data available

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.

not relevant

14.2. UN proper shipping name

not relevant

14.3. Transport hazard class(es)

not relevant

14.4. Packing group

not relevant

14.5. Environmental hazards
not relevant

14.6. Special precautions for user
not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not relevant

Additional information:
No dangerous good in sense of these transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU legislation
No data available

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation
§ 5 MuSchRiV
§ 22 JArbSchG
§ 4 MuSchRiV

Water hazard class (WGK)
WGK:
1 - schwach wassergefährdend

Source:
Self-classification

15.2. Chemical Safety Assessment
Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information
Product contains Diethylene glycol diethyl ether that is subject to TSCA Section 5 SNUR and to TSCA Section
12(b) export notification requirements.
Product contains Tetraethylene glycol dimethyl ether that is subject to TSCA Section 5 proposed SNUR and to
TSCA Section 12(b) export notification requirements.

SECTION 16: Other information

16.1. Indication of changes
No data available

16.2. Abbreviations and acronyms
See overview table at www.euphrac.eu

16.3. Key literature references and sources for data
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures
Commission Regulation (EC) No 790/2009 of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008
Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations
Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
-

16.4. Classification for mixtures and used evaluation method according to regulation (EC) 1272/2008 [CLP]

Classification according to Regulation (EC) No. 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	
Reproductive toxicity *(Repr. 1B)*	H360: May damage fertility or the unborn child.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H360	May damage fertility or the unborn child.

16.6. Training advice

No data available

16.7. Additional information

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.
TÜV SÜD Industrie Service GmbH
Department Environmental Service
Westendstraße 199
80686 Munich - Germany
-
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
-

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

ECO-SOL MAX2, ESL4-WH

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

Inkjet Printing
Identified uses: Inkjet Printing
Restricted to professional users.
Uses advised against -

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Roland DG Benelux NV
Bell-Telephonelaan 2G
B-2440 Geel
Belgium
Telephone: +32 14 57 59 11
E-mail: info@rolanddg.be
Website: www.rolanddg.be
E-mail (competent person): info@rolanddg.be

1.4. Emergency telephone number

24h: +49 228 19240 (Giftnotruf Bonn), +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

GHS07
Exclamation mark

Signal word: Warning

hazard statements for health hazards	
H315	Causes skin irritation.

Precautionary statements Response	
P302 + P352.1	IF ON SKIN: Wash with plenty of soap and water.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P362	Take off contaminated clothing.

2.3. Other hazards

Adverse physicochemical effects:

No known significant effects or critical hazards.

Adverse human health effects and symptoms:

No known significant effects or critical hazards.

Adverse environmental effects:
No known significant effects or critical hazards.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No. 1272/2008 [CLP]	Concen-tration
CAS No.: 112-36-7 **EC No.:** 203-963-7 **REACH No.:** 01-2119969946-13-0000	**bis(2-ethoxyethyl) ether** Skin Irrit. 2 **Warning** H315	50 – 60 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:
Provide fresh air.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Consult physician immediately.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion:
Do NOT induce vomiting. Consult physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
Water spray, Carbon dioxide (CO2), Foam, Dry extinguishing powder

5.2. Special hazards arising from the substance or mixture

No information available.

5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

5.4. Additional information

No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:
See protective measures under point 7 and 8.
Provide adequate ventilation.

6.1.2. For emergency responders

No data available

6.2. Environmental precautions
Do not allow to enter into surface water or drains.
Treat the recovered material as prescribed in the section on waste disposal.

6.3. Methods and material for containment and cleaning up
For cleaning up:
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections
Disposal: see section 13
Personal protection equipment: see section 8

6.5. Additional information
No data available

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Protective measures
Advices on safe handling:
Use only in well-ventilated areas.
Handle and open container with care.
All work processes must always be designed so that the following is as low as possible: Inhalation, Skin contact, Eye contact.
When using do not eat, drink, smoke, sniff.

Fire prevent measures:
Keep away from sources of ignition. - No smoking.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

7.2. Conditions for safe storage, including any incompatibilities
Requirements for storage rooms and vessels:
Keep/Store only in original container. Protect from sunlight.

Hints on storage assembly:
Do not store together with: Oxidising agent
Materials to avoid: Metal, Oxidising agent, Amines

Storage class: 10 – Combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)
Recommendation:
Inkjet Printing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	① long-term occupational exposure limit value ② short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ remark
VLA (FR)	titanium dioxide CAS No.: 13463-67-7	① 10 mg/m³

8.1.2. biological limit values
No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
titanium dioxide CAS No.: 13463-67-7	10 mg/m³	① DNEL worker ② DNEL long-term inhalative (systemic)

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:

Eye glasses with side protection

Skin protection:

By long-term hand contact
Suitable material:

By short-term hand contact Disposable gloves

Respiratory protection:

Provide adequate ventilation as well as local exhaustion at critical locations.
Respiratory protection necessary at: insufficient ventilation, insufficient exhaust
Filtering device (full mask or mouthpiece) with filter: AX

Other protection measures:

Protective clothing: Body protection: not required.
General health and safety measures: Thorough skin-cleansing after handling the product. Wash contaminated clothing prior to re-use. Avoid contact with skin, eyes and clothes.

8.2.3. Environmental exposure controls

No data available

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: liquid
Colour: white
Odour: characteristic
Odour threshold: not applicable

Safety relevant basis data

parameter		at °C	Method	remark
pH	*not determined*		No data available	
Melting point/freezing point	*not determined*		No data available	
Freezing point	*not determined*			
Initial boiling point and boiling range	*not determined*		No data available	
Decomposition temperature (°C):	*not determined*			
Flash point	73.7 °C			
Evaporation rate	*not determined*			
Ignition temperature in °C	*not determined*			
Upper/lower flammability or explosive limits	*not determined*			
Vapour pressure	*not determined*		No data available	
Vapour density	*not determined*			
Density	*not determined*		No data available	
Bulk density	*not determined*			
Water solubility (g/L)	partially soluble			
Partition coefficient: n-octanol/ water	*not determined*		No data available	
Dynamic viscosity	< 5 mPa*s	20 °C		
Kinematic viscosity	*not determined*			

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid
Heat
Frost

10.5. Incompatible materials
Oxidising agent

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LD_{50} oral:** =1,582 mg/kg (Rat) **LC_{50} inhalative:** >5.1 ppmV 4 h

Acute oral toxicity:
There are no data available on the mixture itself.

Acute dermal toxicity:
There are no data available on the mixture itself.

Acute inhalation toxicity:
There are no data available on the mixture itself.

Skin corrosion/irritation:
There are no data available on the mixture itself.

Eye damage/irritation:
There are no data available on the mixture itself.

Respiratory or skin sensitisation:
not sensitising.

Germ cell mutagenicity:
No experimental indications of in vivo mutagenicity exist.

Carcinogenicity:
No indication of human carcinogenicity.

Reproductive toxicity:
No indications of human reproductive toxicity exist.

STOT-single exposure:
There are no data available on the mixture itself.

STOT-repeated exposure:
There are no data available on the mixture itself.

Aspiration hazard:
There are no data available on the mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

Aquatic toxicity:
No information available.

Terrestrial toxicity:
No information available.

Effects in sewage plants:
No information available.

Assessment/classification:
There are no data available on the mixture itself.

12.2. Persistence and degradability

Additional information:

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

Accumulation / Evaluation:

There are no data available on the mixture itself.

12.4. Mobility in soil

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Control report for waste code/ waste marking according to EAKV: Do not allow to enter into surface water or drains.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

08 03 17 *	waste printing toner containing dangerous substances

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10	packaging containing residues of or contaminated by dangerous substances

13.2. Additional information

No data available

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.

not relevant

14.2. UN proper shipping name

not relevant

14.3. Transport hazard class(es)

not relevant

14.4. Packing group

not relevant

14.5. Environmental hazards

not relevant

14.6. Special precautions for user

not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not relevant

Additional information:

No dangerous good in sense of these transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU legislation

No data available

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation

§ 5 MuSchRiV
§ 22 JArbSchG
§ 4 MuSchRiV

Störfallverordnung

remark:

Not subject to StörfallVO.

Water hazard class (WGK)

WGK:

1 - schwach wassergefährdend

Source:

Self-classification

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information

Product contains Diethylene glycol diethyl ether that is subject to TSCA Section 5 SNUR and to TSCA Section 12(b)
export notification requirements.

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

See overview table at www.euphrac.eu

16.3. Key literature references and sources for data

No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) 1272/2008 [CLP]

Classification according to Regulation (EC) No. 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H315	Causes skin irritation.

16.6. Training advice

No data available

16.7. Additional information

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.
TÜV SÜD Industrie Service GmbH
Department Environmental Service
Westendstraße 199
80686 Munich - Germany
-
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
-

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

CLEANING LIQUID FOR ECO-SOL INK, ESL4-CL

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

Inkjet Printing
Identified uses: Inkjet Printing
for professional use only
Uses advised against -

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Roland DG Benelux NV
Bell-Telephonelaan 2G
B-2440 Geel
Belgium

Telephone: +32 14 57 59 11

E-mail: info@rolanddg.be

Website: www.rolanddg.be

E-mail (competent person): info@rolanddg.be

1.4. Emergency telephone number

24h: +32 70 245 245 (Centre Antipoisons Belge - Belgisch Antigifcentrum, BE), +31 30 274 88 88 (Nationaal Vergiftigingen Informatie Centrum, Utrecht, NL) , +32 14 57 59 11 (Roland DG Benelux NV) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:

GHS05
Corrosion

Signal word: Danger

Hazard components for labelling:

?-butyrolactone

hazard statements for health hazards	
H315	Causes skin irritation.
H318	Causes serious eye damage.

Precautionary statements Response	
P302 + P352.1	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Precautionary statements	Response
P362	Take off contaminated clothing.

2.3. Other hazards

Adverse physicochemical effects:
This material is combustible, but will not ignite readily.

Adverse human health effects and symptoms:
No known significant effects or critical hazards.

Adverse environmental effects:
No known significant effects or critical hazards.

Other adverse effects:
No known significant effects or critical hazards.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concen-tration
CAS No.: 112-36-7 **EC No.:** 203-963-7 **REACH No.:** 01-2119969946-13-0000	**bis(2-ethoxyethyl) ether** Skin Irrit. 2 **Warning** H315	70 – 80 Wt %
CAS No.: 96-48-0 **EC No.:** 202-509-5	**?-butyrolactone** Eye Dam. 1, STOT SE 3, Acute Tox. 4 **Danger** H302-H318-H336	< 20 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation:
Provide fresh air.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Consult physician immediately.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. Take off contaminated clothing and wash it before reuse. In case of skin irritation, consult a physician.

After eye contact:
In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion:
Do NOT induce vomiting. Consult physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
Water spray, Carbon dioxide (CO2), Foam, Dry extinguishing powder

5.2. Special hazards arising from the substance or mixture

No data available

5.3. Advice for firefighters

Wear full chemical protective clothing. Use appropriate respiratory protection.

5.4. Additional information
No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:
See protective measures under point 7 and 8.
Provide adequate ventilation.

6.1.2. For emergency responders
No data available

6.2. Environmental precautions
Do not allow to enter into surface water or drains.
Treat the recovered material as prescribed in the section on waste disposal.

6.3. Methods and material for containment and cleaning up

For cleaning up:
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections
Disposal: see section 13
Personal protection equipment: see section 8

6.5. Additional information
No data available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:
Use only in well-ventilated areas.
Handle and open container with care.
All work processes must always be designed so that the following is as low as possible: Inhalation, Skin contact, Eye contact.
When using do not eat, drink, smoke, sniff.

Fire prevent measures:
Keep away from sources of ignition. - No smoking.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:
Keep/Store only in original container. Protect from sunlight.

Hints on storage assembly:
Do not store together with: Oxidising agent
Materials to avoid: Metal, Oxidising agent, Amines

Storage class: 10 – Combustible liquids that cannot be assigned to any of the above storage classes

7.3. Specific end use(s)

Recommendation:
Inkjet Printing

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No data available

8.2. Exposure controls

8.2.1. Appropriate engineering controls
Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:
Eye protection: not required.

Skin protection:
Hand protection: Hand protection: not required.

Respiratory protection:
Provide adequate ventilation as well as local exhaustion at critical locations.
Respiratory protection necessary at: insufficient ventilation, insufficient exhaust.

Other protection measures:
Body protection: not required.
General health and safety measures: Thorough skin-cleansing after handling the product. Wash contaminated clothing prior to re-use. Avoid contact with skin, eyes and clothes.

8.2.3. Environmental exposure controls
Discharge into the environment must be avoided.

8.3. Additional information
No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance
Physical state: liquid
Colour: clear
Odour: characteristic
Odour threshold: not determined

Safety relevant basis data

parameter		at °C	Method	Remark
pH	*not determined*		No data available	
Melting point/freezing point	*not determined*		No data available	
Freezing point	*not determined*			
Initial boiling point and boiling range	*not determined*		No data available	
Decomposition temperature (°C):	*not determined*			
Flash point	71 °C			
Evaporation rate	*not determined*			
Ignition temperature in °C	*not determined*			
Upper/lower flammability or explosive limits	0.3 – 16 Vol-%		as gamma-Butyrolactone	
Vapour pressure	*not determined*		No data available	
Vapour density	*not determined*			
Density	*not determined*		No data available	
Bulk density	*not determined*			
Water solubility (g/L)	easily soluble			
Partition coefficient: n-octanol/ water	*not determined*		No data available	
Dynamic viscosity	< 5 mPa*s	20 °C	No data available	
Kinematic viscosity	*not determined*			

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.2. Chemical stability
The mixture is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions
No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid
Heat
Frost

10.5. Incompatible materials
Oxidising agent

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

CAS No.	Substance name	Toxicological information
96-48-0	?-butyrolactone	**LD_{50} oral:** =1,582 mg/kg (Rat) **LC_{50} inhalative:** >5.1 ppmV 4 h

Acute oral toxicity:
There are no data available on the mixture itself.
Acute dermal toxicity:
There are no data available on the mixture itself.
Acute inhalation toxicity:
There are no data available on the mixture itself.
Skin corrosion/irritation:
There are no data available on the mixture itself.
Eye damage/irritation:
There are no data available on the mixture itself.
Respiratory or skin sensitisation:
not sensitising.
Germ cell mutagenicity:
No experimental indications of in vivo mutagenicity exist.
Carcinogenicity:
No indication of human carcinogenicity.
Reproductive toxicity:
No indications of human reproductive toxicity exist.
STOT-single exposure:
There are no data available on the mixture itself.
STOT-repeated exposure:
There are no data available on the mixture itself.
Aspiration hazard:
There are no data available on the mixture itself.

SECTION 12: Ecological information

12.1. Toxicity
Aquatic toxicity:
No information available.
Terrestrial toxicity:
No information available.
Effects in sewage plants:
No information available.

12.2. Persistence and degradability
Additional information:
Further ecological information: No information available.

12.3. Bioaccumulative potential
Accumulation / Evaluation:
No information available.

12.4. Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Consult the appropriate local waste disposal expert about waste disposal.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Control report for waste code/ waste marking according to EAKV: Do not allow to enter into surface water or drains.

13.1.1. Product/Packaging disposal
Waste codes/waste designations according to EWC/AVV

Waste code product:

08 03 17 *	waste printing toner containing dangerous substances

*: Evidence for disposal must be provided.

Waste code packaging:

15 01 10	packaging containing residues of or contaminated by dangerous substances

13.2. Additional information
No data available

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.
not relevant

14.2. UN proper shipping name
not relevant

14.3. Transport hazard class(es)
not relevant

14.4. Packing group
not relevant

14.5. Environmental hazards
not relevant

14.6. Special precautions for user
not relevant

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not relevant

Additional information:
No dangerous good in sense of these transport regulations.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU legislation
No data available

15.1.2. National regulations

[DE] National regulations

Restrictions of occupation
§ 5 MuSchRiV
§ 22 JArbSchG
§ 4 MuSchRiV

Water hazard class (WGK)

WGK:
1 - schwach wassergefährdend

Source:
Self-classification

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information

No data available

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

See overview table at www.euphrac.eu

16.3. Key literature references and sources for data

No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Skin corrosion/irritation *(Skin Irrit. 2)*	H315: Causes skin irritation.	
Serious eye damage/eye irritation *(Eye Dam. 1)*	H318: Causes serious eye damage.	

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.

16.6. Training advice

No data available

16.7. Additional information

This Safety Data Sheet was drawn up by TÜV SÜD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.
TÜV SÜD Industrie Service GmbH
Department Environmental Service
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80686 Munich - Germany
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The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
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