



LEADING THE WAY

SAFETY DATA SHEET

Print Date
Apr-21-2016

Revision Date
Apr-21-2016

Revision Number
1.1

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product code **22389**
Product name **Flush**
Product category **Optimizer Eco Solvent Ink for Roland**

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

Recommended use Printing operations

1.3 Details of the supplier of the safety data sheet

DATAPLOT GmbH
Gutenbergstraße 15
D-24558 Henstedt-Ulzburg
Germany
Tel.: +49 4193-9950
Fax: +49 4193-995220

For further information, please contact

Contact person Dataplot: +49 4193-9950
E-mail address info@dataplot.de

1.4 Emergency telephone number

Giftinformationszentrum Mainz, Germany
Tel: +49 6131 19240

Section 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

According to Regulation (EC) No 1272/2008

Acute toxicity - Inhalation (Vapors)	Category 4 - (H332)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Serious eye damage/eye irritation	Category 1 - (H318)
Chronic aquatic toxicity	Category 3 - (H412)

2.2 Label elements



Signal Word
Danger

Hazard Statements

H318 - Causes serious eye damage
H332 - Harmful if inhaled
H412 - Harmful to aquatic life with long lasting effects

EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary Statements - EU (§28, 1272/2008)

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P273 - Avoid release to the environment

P280 - Wear protective gloves/protective clothing/eye protection/face protection

2.3 Other Hazards

Other Hazards Harmful to aquatic life.
General Hazards No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Component	EC No.	CAS-No	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH No.	Note
Ethyl 3-Ethoxypropionate	212-112-9	763-69-9	30 - 60	(EUH066) Flam. Liq. 3 (H226)	No data available	1
Ethylene glycol monobutyl ether acetate	203-933-3	112-07-2	10 - 30	Acute Tox. 4 (H312) Acute Tox. 4 (H332)	No data available	1
Butyrolactone	202-509-5	96-48-0	10 - 30	Acute Tox. 4 (H302) Eye Dam. 1 (H318) STOT SE 3 (H336)	No data available	1

Note

1. Substance with a Community workplace exposure limit

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

Section 4: FIRST AID MEASURES

4.1 Description of first aid measures

General Advice Show this safety data sheet to the doctor in attendance.

Eye Contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention if irritation develops and persists.

Skin Contact Wash off immediately with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation (redness, rash, blistering) develops, get medical attention.

Inhalation Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

None under normal use conditions.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media

Foam. Carbon dioxide (CO₂). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available.

5.2 Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. May emit toxic fumes under fire conditions.

5.3 Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Cool containers / tanks with water spray. Sealed containers may rupture when heated.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Use clean non-sparking tools to collect absorbed material.

6.4 Reference to other sections

See Section 12 for more information.

Section 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

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

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s)

Exposure Scenario	No information available.
Risk Management Methods (RMM)	The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limits

Component	The United Kingdom
Ethylene glycol monobutyl ether acetate 112-07-2	STEL: 50 ppm STEL: 332 mg/m ³ TWA: 20 ppm TWA: 133 mg/m ³ Skin

Component	France
Ethylene glycol monobutyl ether acetate 112-07-2	TWA/VME: 2 ppm (indicative limit) TWA/VME: 13.3 mg/m ³ (indicative limit) STEL/VLCT: 30 ppm (indicative limit) STEL/VLCT: 199.8 mg/m ³ (indicative limit) Skin

Component	Germany
Ethyl 3-Ethoxypropionate	TWA/MAK: 100 ppm

763-69-9	TWA/MAK: 610 mg/m ³ Peak: 100 ppm Peak: 610 mg/m ³ TWA/AGW: 100 ppm TWA/AGW: 610 mg/m ³ Skin
Ethylene glycol monobutyl ether acetate 112-07-2	TWA/MAK: 10 ppm TWA/MAK: 66 mg/m ³ Peak: 20 ppm Peak: 132 mg/m ³ TWA/AGW: 20 ppm TWA/AGW: 130 mg/m ³ Skin
Component	Spain
Ethylene glycol monobutyl ether acetate 112-07-2	STEL/VLA-EC: 50 ppm STEL/VLA-EC: 333 mg/m ³ TWA/VLA-ED: 20 ppm TWA/VLA-ED: 133 mg/m ³ Skin
Component	Italy
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm TWA: 133 mg/m ³ STEL: 50 ppm STEL: 333 mg/m ³ Skin
Component	Portugal
Ethylene glycol monobutyl ether acetate 112-07-2	TWA/VLE-MP: 20 ppm
Component	The Netherlands
Ethylene glycol monobutyl ether acetate 112-07-2	STEL: 333 mg/m ³ TWA: 135 mg/m ³ Skin
Component	Finland
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm TWA: 130 mg/m ³ STEL: 50 ppm STEL: 330 mg/m ³ Skin
Component	Denmark
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm TWA: 130 mg/m ³ Skin
Component	Austria
Ethylene glycol monobutyl ether acetate 112-07-2	STEL/KZW: 40 ppm STEL/KZW: 270 mg/m ³ TWA/TMW: 20 ppm TWA/TMW: 133 mg/m ³ Skin
Component	Switzerland
Ethyl 3-Ethoxypropionate 763-69-9	STEL/KZW: 100 ppm STEL/KZW: 610 mg/m ³ TWA/MAK: 100 ppm TWA/MAK: 610 mg/m ³ Skin
Ethylene glycol monobutyl ether acetate 112-07-2	STEL/KZW: 20 ppm STEL/KZW: 132 mg/m ³ TWA/MAK: 10 ppm TWA/MAK: 66 mg/m ³ Skin

Component	Poland
Ethylene glycol monobutyl ether acetate 112-07-2	NDSch: 300 mg/m ³ TWA/ND5: 100 mg/m ³ Skin
Component	Norway
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 10 ppm TWA: 65 mg/m ³ Skin
Component	Ireland
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm TWA: 133 mg/m ³ STEL: 50 ppm STEL: 333 mg/m ³ Skin
Component	Australia TWA
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm TWA: 133 mg/m ³
Component	Australia STEL
Ethylene glycol monobutyl ether acetate 112-07-2	STEL: 50 ppm STEL: 333 mg/m ³

Derived No Effect Level (DNEL) No information available.
Predicted No Effect Concentration (PNEC) No information available.

8.2 Exposure controls

Engineering Measures

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Users are advised to consider national Occupational Exposure Limits or other equivalent values. In case of insufficient ventilation, wear suitable respiratory equipment.

Personal protective equipment

Eye/face Protection

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

Skin Protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory Protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations

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

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State	Liquid	Appearance	Colored
Odor	No information available	Odor Threshold	No information available
Property	Values	Remarks • Method	
pH		No data available	
Melting point/freezing point		No data available	
Boiling point/Boiling Range	> 149 °C / 300 °F		
Flash Point	64 °C / 147 °F	Setaflash closed cup	
Evaporation rate		No data available	

Flammability Limit in Air		
Upper flammability limit		No data available
Lower flammability limit		No data available
Vapor Pressure		No data available
Vapor Density		No data available
Specific Gravity	0.97	
Water Solubility		No data available
Solubility in other solvents		No data available
Partition coefficient: n-octanol/water		No data available
Autoignition Temperature		No data available
Decomposition temperature		No data available
Kinematic viscosity		No data available
Dynamic viscosity		No data available
Explosive Properties	No data available	
Oxidizing Properties	No data available	

9.2 Other information

Softening Point No data available

Section 10: STABILITY AND REACTIVITY**10.1 Reactivity**

No information available.

10.2 Chemical Stability

Stable under normal conditions.

10.3 Possibility of Hazardous Reactions

None under normal processing.

10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

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

10.6 Hazardous decomposition products

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

Section 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute Toxicity**

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

Unknown Acute Toxicity 60 % of the mixture consists of ingredient(s) of unknown toxicity.

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

ATEmix (oral)	2,267.00 mg/kg
ATEmix (dermal)	2,368.00 mg/kg
ATEmix (inhalation-dust/mist)	2.40 mg/L
ATEmix (inhalation-vapor)	18.00 mg/L

Unknown Acute Toxicity

60 % of the mixture consists of ingredient(s) of unknown toxicity.

0.01 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

- 60 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
 60 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
 60 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
 60 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Component	Oral LD50
Ethyl 3-Ethoxypropionate 763-69-9	3200 mg/kg (Rat)
Ethylene glycol monobutyl ether acetate 112-07-2	1600 mg/kg (Rat)
Butyrolactone 96-48-0	1540 mg/kg (Rat)

Component	LD50 Dermal
Ethyl 3-Ethoxypropionate 763-69-9	10 mL/kg (Rabbit)
Ethylene glycol monobutyl ether acetate 112-07-2	1480 mg/kg (Rabbit)

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

Skin corrosion/irritation	There is no data for this product.
Eye damage/irritation	There is no data for this product.
Sensitisation	There is no data for this product.
Mutagenic Effects	There is no data for this product.
Carcinogenic effects	There is no data for this product.
Reproductive Effects	There is no data for this product.
STOT - single exposure	There is no data for this product.
STOT - repeated exposure	There is no data for this product.
Aspiration hazard	There is no data for this product.

Section 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Harmful to aquatic life Harmful to aquatic life with long lasting effects

Unknown Aquatic Toxicity

0.01 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

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

Component	Fish
Ethyl 3-Ethoxypropionate 763-69-9	96h LC50 Pimephales promelas: 62 mg/L [static]
Butyrolactone 96-48-0	96h LC50 Leuciscus idus: 220 - 460 mg/L [static]

Component	Crustacea
Ethyl 3-Ethoxypropionate 763-69-9	48h EC50 Daphnia magna: 970 mg/L
Butyrolactone 96-48-0	48h EC50 Daphnia magna Straus: >500 mg/L

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

Component	Partition coefficient
Ethyl 3-Ethoxypropionate 763-69-9	1.35
Ethylene glycol monobutyl ether acetate 112-07-2	1.51
Butyrolactone 96-48-0	-0.566

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects.

No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste from Residues / Unused Products Contain and dispose of waste according to local regulations.

Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14: TRANSPORT INFORMATION

ADR

14.2 **Proper Shipping Name** Not Regulated
Printing Ink Related Material

ICAO / IATA / IMDG / IMO

14.2 **Proper Shipping Name** Not Regulated
Printing Ink Related Material

Section 15: REGULATORY INFORMATION

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

European Union

International Inventories

For further information, please contact: Supplier (manufacturer/importer/downstream user/distributor)

15.2 Chemical Safety Assessment

No information available.

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3

H312 - Harmful in contact with skin
H332 - Harmful if inhaled
H226 - Flammable liquid and vapor
H302 - Harmful if swallowed
H318 - Causes serious eye damage
H336 - May cause drowsiness or dizziness
EUH066 - Repeated exposure may cause skin dryness or cracking

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)
STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value

Revision Date Apr-21-2016

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

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End of Safety Data Sheet