

SAFETY DATA SHEET

According to EC Directive 2001/58/EC Revision Date Nov-20-2009

Print Date Nov-20-2009

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

Product code Product name Product description OSIROCY Optimizer Cyan (22383 - 440 ml, 22413 - 1L) Eco Solvent Ink for Roland (OSI-RO)

Manufacturer or supplier's details GERMANY DATAPLOT GmbH Gutenbergstraße 15 D-24558 Henstedt-Ulzburg Tel.: +49 4193-9950 Fax: +49 4193-995220 **Emergency Telephone Number** GERMANY Giftzentrale Mainz Tel.: +49 6131/192-40

2. HAZARDS IDENTIFICATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

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Classification

Xn;R22 - Xi;R36 - R52/53 Xn - Harmful



Most Important Hazards

Harmful if swallowed Irritating to eyes Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

| Appearance Emergency Overview | Viscous liquid Harmful to aquatic organisms. Harmful. Irritant. |
|----------------------------------|--|
| Eyes Skin Inhalation | May cause eye irritation. May cause skin irritation and/or dermatitis. May cause irritation of respiratory tract. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. |
| Ingestion | Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | EC No. | CAS-No | Weight % | Classification |
|---|-----------|-----------|----------|------------------|
| Diethylene glycol diethyl ether | 203-963-7 | 112-36-7 | 50 - 60 | Xi;R36 |
| Gamma Butyrolactone | 202-509-5 | 96-48-0 | 10 - 20 | Xn;R22 Xi;R36 |
| Ethylene glycol monobutyl ether acetate | 203-933-3 | 112-07-2 | 5 - 10 | Xn;R20/21 |
| Dimethyl Glutarate | 214-277-2 | 1119-40-0 | 5 - 10 | Xi;R36/38 |
| Dimethyl Adipate | 211-020-6 | 627-93-0 | 1 - 5 | Xn;R22 |

For the full text of the R-phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| continue fluishing for at least 15 minutes. Get medical attention immediately if irritation develops and persists. Skin Contact Wash off immediately with soap and plenty of water. Use a mild soap if available. Rinse immediately with plenty of water for at least 15 minutes. Remove contaminated clothing. Irritation develops, get medical attention. nhalation Move to fresh air. If breathed in, move person into fresh air. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately. ngestion If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person. Statable Extinguishing Media Foam. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures th are appropriate to local circumstances and the surrounding environment. Protective Equipment and Proceautions for Firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Keep paway from fire, spray. Fire or intense heat may cause violent rupture of packages. Specific Hazards Arising from the Chemical Thermal decomposition can lead to release of irritating gases and vapours. Burning prod obnovious and toxic fumes. Contain spillage, soak up with non-combustible absorbent material. (e.g. sand, earth, diatomaceous earth, vermiculite) and tarnofer to a containe for disposal according to loc nation regulations (see section 13). Do not use sparking tools. Personal Precautions Prevent product from entering drains. Prevent further leakage or spi | | |
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| | Storage | |
| | 8. EXP | OSURE CONTROLS / PERSONAL PROTECTION |
| Exposure limits | Exposure limits | |

| Component | European Union | The United Kingdom | France | Spain | Germany |
|---------------------------|----------------|----------------------|--------------------------------|----------------------------------|----------------------------------|
| Ethylene glycol monobutyl | | STEL: 50 ppm TWA: 20 | VME: 2 ppm VME: 13.3 | Skin VLA-EC: 333 | MAK: 10 ppm MAK: 66 |
| ether acetate | | ppm Skin | mg/m ³ VLCT: 30 ppm | mg/m ³ VLA-EC: 50 ppm | mg/m ³ Skin Peak: 132 |
| | | | VLCT: 199.8 mg/m ³ | VLA-ED: 133 mg/m ³ | mg/m ³ Peak: 20 ppm |
| | | | Skin | VLA-ED: 20 ppm | |

| Component | Italy | Portugal | The Netherlands | Finland | Austria |
|---------------------------|---------------------------------|------------------|----------------------------------|---------------------------------|----------------------------------|
| Ethylene glycol monobutyl | TWA: 133 mg/m ³ TWA: | TWA: 20 ppm Skin | Skin STEL: 333 mg/m ³ | TWA: 20 ppm TWA: | Skin STEL: 40 ppm |
| ether acetate | 20 ppm STEL: 333 | notation | TWA: 135 mg/m ³ | 130 mg/m ³ STEL: 50 | STEL: 270 mg/m ³ MAK: |
| | mg/m ³ STEL: 50 ppm | | _ | ppm STEL: 330 mg/m ³ | 20 ppm MAK: 133 |
| | Skin | | | Skin | mg/m ³ |

| Component | Switzerland | Poland | Norway | Ireland | Denmark |
|---------------------------|-----------------------------------|------------------------------|--------------------------------|---------------------------------|---------------------------------|
| Ethylene glycol monobutyl | Skin STEL: 80 ppm | NDSCh: 300 mg/m ³ | TWA: 65 mg/m ³ TWA: | TWA: 20 ppm TWA: | TWA: 130 mg/m ³ TWA: |
| ether acetate | STEL: 540 mg/m ³ MAK: | NDS: 100 mg/m ³ | 10 ppm Skin | 133 mg/m ³ STEL: 50 | 20 ppm Skin |
| | 20 ppm MAK: 135 | - | | ppm STEL: 333 mg/m ³ | |
| | mg/m ³ | | | Skin | |
| Dimethyl Glutarate | STEL: 20 mg/m ³ STEL: | | | | |
| - | 3 ppm MAK: 3 ppm | | | | |
| | MAK: 20 mg/m ³ | | | | |
| Dimethyl Adipate | STEL: 1 mg/m ³ STEL: | | | | |
| | 0.14 ppm MAK: 1 mg/m ³ | | | | |
| | MAK: 0.14 ppm | | | | |

Occupational exposure controls

| Engineering Measures | Use only with adequate ventilation. Use ventilation adequate to keep exposures below recommended exposure limits. See MSDS. In case of insufficient ventilation, wear suitable respiratory equipment. | | | |
|---------------------------------|---|--|--|--|
| Personal Protective Equipment | | | | |
| Respiratory Protection | Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Respirator with a vapour filter. | | | |
| Eye Protection | Ensure that eyewash stations and safety showers are close to the workstation location. Avoid contact with eyes. Safety glasses with side-shields. Goggles. Face-shield. | | | |
| Skin Protection | Wear protective gloves/clothing. Solvent-resistant apron and boots. | | | |
| Hand Protection | Nitrile rubber. Neoprene gloves. | | | |
| General Hygiene Considerations | Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before eating, drinking, or smoking. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. | | | |
| Environmental exposure controls | No information available | | | |
| 9. | 9. PHYSICAL AND CHEMICAL PROPERTIES | | | |

| | 9. PHYSICAL AND C | CHEMICAL PR | OPERTIES | ; | |
|-----------------------------|--------------------------|----------------------------------|--------------|--------------------------|--|
| Appearance | Viscous liquid | Physical State | | Liquid | |
| Odor | Characteristic | Odor Threshold | l | No information available | |
| рН | No information available | Autoignition Te | mperature | No information available | |
| Boiling point/Boiling Range | >149°C / >300°F | Melting Point/R | ange | No information available | |
| Freezing Point/Range | No information available | Solubility | | No information available | |
| Evaporation Rate | No information available | Partition Coeffic octanol/water) | cient (n- | No information available | |
| Vapour Pressure | No information available | Vapour Density | | No information available | |
| Flammability (solid, gas) | No information available | | | | |
| Flammability Limits in Air | | Flash Point | 67°C / 153°l | F | |
| Upper No information availa | able | Method | Closed cup | | |
| Lower No information availa | able | | | | |
| | | Photochemicall | y Reactive | No | |
| Weight Per Gallon (Ibs/gal) | 8.167 | Specific Gravity | / | 0.98 | |
| 10 STABILITY AND REACTIVITY | | | | | |

TO. STABILITY AND REACTIVITY

| Chemical Stability | Stable under normal conditions. |
|------------------------------------|---|
| Conditions to Avoid | Heat, flames and sparks. |
| Incompatible Products | Strong acids. Strong bases. Strong oxidizing agents. Reducing agents. |
| Hazardous Decomposition Products | Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO2). Carbon monoxide. |
| Possibility of Hazardous Reactions | None under normal processing. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------------------------|------------------|---------------------|---------------------|
| Diethylene glycol diethyl ether | 4970 mg/kg (Rat) | 6700 µL/kg (Rabbit) | |
| Gamma Butyrolactone | 1540 mg/kg (Rat) | | 2.68 mg/L (Rat) 4 h |
| Ethylene glycol monobutyl ether | 1600 mg/kg (Rat) | 1480 mg/kg (Rabbit) | |
| acetate | | | |
| Dimethyl Glutarate | 8191 mg/kg (Rat) | | 5.6 mg/L (Rat)4 h |
| Dimethyl Adipate | 1920 mg/kg (Rat) | | |

Chronic Toxicity

No information available

| Sensitisation | No information available |
|-----------------------|--------------------------|
| Neurological Effects | No information available |
| Mutagenic Effects | No information available |
| Reproductive Effects | No information available |
| Developmental Effects | No information available |
| Teratogenicity | No information available |
| Chronic Effects | No information available |
| Target Organ Effects | No information available |

12. ECOLOGICAL INFORMATION

Ecotoxicity

12. ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. We have no quantitative data concerning the ecological effects of this product. Environmental fate information is derived from consideration of the properties of the ingredients. Should not be released into the environment.

| Component | Freshwater Algae | Freshwater Fish | Water Flea |
|---------------------------------|-----------------------------------|------------------------------------|----------------------------------|
| Gamma Butyrolactone | 72 Hr EC50 Scenedesmus | 96 Hr LC50 Leuciscus idus: 220-460 | 48 Hr EC50 Daphnia magna Straus: |
| | subspicatus: 360 mg/L; 96 Hr EC50 | mg/L [static] | >500 mg/L |
| | Scenedesmus subspicatus: 79 mg/L | | - |
| Ethylene glycol monobutyl ether | 72 Hr EC50 Scenedesmus | | 48 Hr EC50 water flea: 37 mg/L |
| acetate | subspicatus: >500 mg/L | | - |
| Dimethyl Glutarate | | 96 Hr LC50 Pimephales promelas: | 48 Hr EC50 Daphnia magna: 122.1- |
| - | | 19.6-26.2 mg/L [static] | 163.5 mg/L |

Persistence and Degradability Bioaccumulation Mobility in Environmental Media

No information available No information available No information available

| Component | log Pow |
|---|---------|
| Gamma Butyrolactone | -0.566 |
| Ethylene glycol monobutyl ether acetate | 1.51 |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Dispose of contents/container in accordance with local regulation.

Contaminated Packaging

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

14. TRANSPORT INFORMATION

RID

Not classified as dangerous in the meaning of transport regulations

ADR

Not classified as dangerous in the meaning of transport regulations **IMDG/IMO**

Not classified as dangerous in the meaning of transport regulations

ICAO/IATA

Not classified as dangerous in the meaning of transport regulations

15. REGULATORY INFORMATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC

Labelling

Symbol(s)

Xn

Xn - Harmful



R -phrase(s) R22 - Harmful if swallowed R36 - Irritating to eyes R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S -phrase(s)

S 2 - Keep out of the reach of children
S25 - Avoid contact with eyes
S46 - If swallowed, seek medical advice immediately and show this container or label

International Inventories

Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

REACH: Substances of Very High Concern (SVHC): Article 57 of Regulation (EC) No 1907/2006

Does NOT contain a listed substance

16. OTHER INFORMATION

Text of R phrases mentioned in Section 3

R36 - Irritating to eyes R22 - Harmful if swallowed R53 - May cause long-term adverse effects in the aquatic environment R52 - Harmful to aquatic organisms R20/21 - Harmful by inhalation and in contact with skin R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Revision Summary New MSDS format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



SAFETY DATA SHEET

According to EC Directive 2001/58/EC Revision Date Nov-20-2009

Print Date Nov-20-2009

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

Product code Product name Product description

OSIROMA Optimizer Magenta (22384 - 440 ml, 22414 - 1L) Eco Solvent Ink for Roland (OSI-RO)

Manufacturer or supplier's details GERMANY DATAPLOT GmbH Gutenbergstraße 15 D-24558 Henstedt-Ulzburg Tel.: +49 4193-9950 Fax: +49 4193-995220 Emergency Telephone Number GERMANY Giftzentrale Mainz Tel.: +49 6131/192-40

2. HAZARDS IDENTIFICATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

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Classification

Xi;R36 - R52/53 Xi - Irritant



Most Important Hazards

Irritating to eyes Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

| Appearance Emergency Overview | Viscous liquid Harmful to aquatic organisms. Irritant. |
|----------------------------------|---|
| Eyes | May cause eye irritation. |
| Skin | May cause skin irritation and/or dermatitis. |
| Inhalation | May cause irritation of respiratory tract. Inhalation of high vapour concentrations may cause |
| | symptoms like headache, dizziness, tiredness, nausea and vomiting. |
| Ingestion | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | EC No. | CAS-No | Weight % | Classification |
|---------------------------------|-----------|-----------|----------|----------------|
| Diethylene glycol diethyl ether | 203-963-7 | 112-36-7 | 60 - 70 | Xi;R36 |
| Gamma Butyrolactone | 202-509-5 | 96-48-0 | 10 - 20 | Xn;R22 |
| | | | | Xi;R36 |
| Dimethyl Glutarate | 214-277-2 | 1119-40-0 | 5 - 10 | Xi;R36/38 |
| Dimethyl Adipate | 211-020-6 | 627-93-0 | 1 - 5 | Xn;R22 |

For the full text of the R-phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

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 immediately if irritation develops and persists.

| Skin Contact | Wash off immediately with soap and plenty of water. Use a mild soap if available. Rinse immediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation develops, get medical attention. |
|--|--|
| Inhalation | Move to fresh air. If breathed in, move person into fresh air. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately. |
| Ingestion | If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person. |
| | 5. FIRE-FIGHTING MEASURES |
| Flammable Properties | No information available |
| Suitable Extinguishing Media | Foam. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Protective Equipment and Precautions for Firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Keep away from fire, sparks and heated surfaces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or intense heat may cause violent rupture of packages. |
| Specific Hazards Arising from the Chemical | Thermal decomposition can lead to release of irritating gases and vapours. Burning produces obnoxious and toxic fumes. |
| | 6. ACCIDENTAL RELEASE MEASURES |
| Personal Precautions | Remove all sources of ignition. Heat, flames and sparks. Ventilate the area. Avoid breathing dust or vapor. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. |
| Methods for Cleaning Up | Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Do not use sparking tools. |
| Environmental Precautions | Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities. |
| | 7. HANDLING AND STORAGE |
| Handling | Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove and wash contaminated clothing before re-use. Discard contaminated shoes. When using do not smoke. Take notice of labels and material safety data sheets for the working chemicals. Do not take internally. Harmful or fatal if swallowed. |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep out of the reach of children. Keep away from heat and sources of ignition. Take notice of the directions of use on the label. |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits

| Component | Switzerland | Poland | Norway | Ireland | Denmark |
|--------------------|----------------------------------|--------|--------|---------|---------|
| Dimethyl Glutarate | STEL: 20 mg/m ³ STEL: | | | | |
| | 3 ppm MAK: 3 ppm | | | | |
| | MAK: 20 mg/m ³ | | | | |

| Component | Switzerland | Poland | Norway | Ireland | Denmark |
|------------------|-----------------------------------|--------|--------|---------|---------|
| Dimethyl Adipate | STEL: 1 mg/m ³ STEL: | | | | |
| | 0.14 ppm MAK: 1 mg/m ³ | | | | |
| | MAK: 0.14 ppm | | | | |

Occupational exposure controls

| Engineering Measures | Use only with adequate ventilation. Use ventilation adequate to keep exposures below recommended exposure limits. See MSDS. In case of insufficient ventilation, wear suitable respiratory equipment. |
|---------------------------------|---|
| Personal Protective Equipment | |
| Respiratory Protection | Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Respirator with a vapour filter. |
| Eye Protection | Ensure that eyewash stations and safety showers are close to the workstation location. Avoid contact with eyes. Safety glasses with side-shields. Goggles. Face-shield. |
| Skin Protection | Wear protective gloves/clothing. Solvent-resistant apron and boots. |
| Hand Protection | Nitrile rubber. Neoprene gloves. |
| General Hygiene Considerations | Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before eating, drinking, or smoking. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. |
| Environmental exposure controls | No information available |

9. PHYSICAL AND CHEMICAL PROPERTIES

| Appearance Odor pH Boiling point/Boiling Range Freezing Point/Range Evaporation Rate | Viscous liquid Characteristic No information available >149°C / >300°F No information available No information available | Physical State Odor Threshold Autoignition Ten Melting Point/Ra Solubility Partition Coeffici octanol/water) | nge | Liquid No information available No information available No information available No information available No information available |
|---|---|--|----------------------------|--|
| Vapour Pressure Flammability (solid, gas) | No information available No information available | Vapour Density | | No information available |
| Flammability Limits in Air Upper No information availa Lower No information availa | | Flash Point Method | 67°C / 153°l Closed cup | = |
| | | Photochemically | Reactive | No |
| Weight Per Gallon (Ibs/gal) | 8.083 | Specific Gravity | | 0.969 |

10. STABILITY AND REACTIVITY

| Chemical Stability | Stable under normal conditions. |
|------------------------------------|---|
| Conditions to Avoid | Heat, flames and sparks. |
| Incompatible Products | Strong acids. Strong bases. Strong oxidizing agents. Reducing agents. |
| Hazardous Decomposition Products | Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO2). Carbon monoxide. |
| Possibility of Hazardous Reactions | None under normal processing. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------------------------|------------------|---------------------|--------------------|
| Diethylene glycol diethyl ether | 4970 mg/kg (Rat) | 6700 µL/kg (Rabbit) | |
| Gamma Butyrolactone | 1540 mg/kg (Rat) | | 2.68 mg/L (Rat)4 h |
| Dimethyl Glutarate | 8191 mg/kg (Rat) | | 5.6 mg/L (Rat) 4 h |
| Dimethyl Adipate | 1920 mg/kg (Rat) | | - · · · |

Chronic Toxicity No information available

| Sensitisation | No information available |
|-----------------------|--------------------------|
| Neurological Effects | No information available |
| Mutagenic Effects | No information available |
| Reproductive Effects | No information available |
| Developmental Effects | No information available |
| Teratogenicity | No information available |
| Chronic Effects | No information available |
| Target Organ Effects | No information available |

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. We have no quantitative data concerning the ecological effects of this product. Environmental fate information is derived from consideration of the properties of the ingredients. Should not be released into the environment.

| Component | Freshwater Algae | Freshwater Fish | Water Flea |
|---------------------|-----------------------------------|------------------------------------|----------------------------------|
| Gamma Butyrolactone | 72 Hr EC50 Scenedesmus | 96 Hr LC50 Leuciscus idus: 220-460 | 48 Hr EC50 Daphnia magna Straus: |
| | subspicatus: 360 mg/L; 96 Hr EC50 | mg/L [static] | >500 mg/L |
| | Scenedesmus subspicatus: 79 mg/L | | - |
| Dimethyl Glutarate | | 96 Hr LC50 Pimephales promelas: | 48 Hr EC50 Daphnia magna: 122.1- |
| · | | 19.6-26.2 mg/L [static] | 163.5 mg/L |

Persistence and Degradability Bioaccumulation **Mobility in Environmental Media**

No information available No information available No information available

| Component | log Pow |
|---------------------|---------|
| Gamma Butyrolactone | -0.566 |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Dispose of contents/container in accordance with local regulation.

Contaminated Packaging

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

14. TRANSPORT INFORMATION

RID

Not classified as dangerous in the meaning of transport regulations

ADR

Not classified as dangerous in the meaning of transport regulations

IMDG/IMO

Not classified as dangerous in the meaning of transport regulations

ΙCAO/ΙΑΤΑ

14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations

15. REGULATORY INFORMATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC

Labelling

Symbol(s)

Xi - Irritant



R -phrase(s)

R36 - Irritating to eyes R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S -phrase(s)

S 2 - Keep out of the reach of children S25 - Avoid contact with eyes S46 - If swallowed, seek medical advice immediately and show this container or label

International Inventories

Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

REACH: Substances of Very High Concern (SVHC): Article 57 of Regulation (EC) No 1907/2006

Does NOT contain a listed substance

16. OTHER INFORMATION

Text of R phrases mentioned in Section 3 R36 - Irritating to eyes R22 - Harmful if swallowed R36/38 - Irritating to eyes and skin R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Revision Date Nov-20-2009

Revision Summary New MSDS format

Disclaimer

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End of Safety Data Sheet



SAFETY DATA SHEET

According to EC Directive 2001/58/EC Revision Date Nov-20-2009

Print Date Nov-20-2009

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

Product code Product name Product description

OSIROYE Optimizer Yellow (22385 - 440 ml, 22415 - 1L) Eco Solvent Ink for Roland (OSI-RO)

Manufacturer or supplier's details GERMANY DATAPLOT GmbH Gutenbergstraße 15 D-24558 Henstedt-Ulzburg Tel.: +49 4193-9950 Fax: +49 4193-995220 Emergency Telephone Number GERMANY Giftzentrale Mainz Tel.: +49 6131/192-40

2. HAZARDS IDENTIFICATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

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Classification

Xn;R22 - Xi;R36 - R52/53 Xn - Harmful



Most Important Hazards

Harmful if swallowed Irritating to eyes Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

| Appearance Emergency Overview | Viscous liquid Harmful to aquatic organisms. Harmful. Irritant. |
|----------------------------------|--|
| Eyes Skin Inhalation | May cause eye irritation. May cause skin irritation and/or dermatitis. May cause irritation of respiratory tract. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. |
| Ingestion | Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | EC No. | CAS-No | Weight % | Classification |
|---|-----------|-----------|----------|------------------|
| Diethylene glycol diethyl ether | 203-963-7 | 112-36-7 | 50 - 60 | Xi;R36 |
| Gamma Butyrolactone | 202-509-5 | 96-48-0 | 10 - 20 | Xn;R22 Xi;R36 |
| Ethylene glycol monobutyl ether acetate | 203-933-3 | 112-07-2 | 5 - 10 | Xn;R20/21 |
| Dimethyl Glutarate | 214-277-2 | 1119-40-0 | 5 - 10 | Xi;R36/38 |
| Dimethyl Adipate | 211-020-6 | 627-93-0 | 1 - 5 | Xn;R22 |

For the full text of the R-phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| Eye ContactImmediately flush with pl continue flushing for at le develops and persists.Skin ContactWash off immediately with immediately with plenty of irritation develops, get mnhalationMove to fresh air. If brea stopped, administer artifit immediately. Never givengestionIf swallowed, DO NOT in immediately. Never giveFlammable PropertiesNo information availableSuitable Extinguishing MediaFoam. Carbon dioxide (C are appropriate to local of As in any fire, wear self-of (approved or equivalent) surfaces. Keep container intense heat may cause of Obnoxious and toxic furmedSpecific Hazards Arising from the ChemicalThermal decomposition of obnoxious and toxic furmedPersonal PrecautionsRemove all sources of ig dust or vapor. Avoid con Keep people away from a | thed in, move person into fresh air. If breathing is irregular or icial respiration. Get medical attention immediately. Induce vomiting. Call a physician or Poison Control Centre anything by mouth to an unconscious person. TING MEASURES CO2). Dry chemical. Water spray. Use extinguishing measures that circumstances and the surrounding environment. Contained breathing apparatus pressure-demand, MSHA/NIOSH and full protective gear. Keep away from fire, sparks and heated r tightly closed. Cool containers / tanks with water spray. Fire or violent rupture of packages. can lead to release of irritating gases and vapours. Burning produce |
|--|--|
| Skin ContactContinue flushing for at le develops and persists.Skin ContactWash off immediately wit immediately with plenty of irritation develops, get mInhalationMove to fresh air. If brea stopped, administer artifitIngestionIf swallowed, DO NOT in immediately. Never giveFlammable PropertiesNo information availableSuitable Extinguishing MediaFoam. Carbon dioxide (C are appropriate to local of As in any fire, wear self-of (approved or equivalent) surfaces. Keep container intense heat may causeSpecific Hazards Arising from the ChemicalThermal decomposition of obnoxious and toxic furmPersonal PrecautionsRemove all sources of ig dust or vapor. Avoid con Keep people away from a | east 15 minutes. Get medical attention immediately if irritation ith soap and plenty of water. Use a mild soap if available. Rinse of water for at least 15 minutes. Remove contaminated clothing. If redical attention. thed in, move person into fresh air. If breathing is irregular or icial respiration. Get medical attention immediately. nduce vomiting. Call a physician or Poison Control Centre anything by mouth to an unconscious person. TING MEASURES |
| InhalationImmediately with plenty of irritation develops, get mIngestionMove to fresh air. If breat stopped, administer artificIngestionIf swallowed, DO NOT in immediately. Never giveFlammable PropertiesNo information availableSuitable Extinguishing MediaFoam. Carbon dioxide (C are appropriate to local of As in any fire, wear self- (approved or equivalent) surfaces. Keep container intense heat may causeSpecific Hazards Arising from the ChemicalThermal decomposition of obnoxious and toxic fumPersonal PrecautionsRemove all sources of ig dust or vapor. Avoid con Keep people away from a | of water for at least 15 minutes. Remove contaminated clothing. If nedical attention. thed in, move person into fresh air. If breathing is irregular or icial respiration. Get medical attention immediately. nduce vomiting. Call a physician or Poison Control Centre anything by mouth to an unconscious person. TING MEASURES CO2). Dry chemical. Water spray. Use extinguishing measures that circumstances and the surrounding environment. contained breathing apparatus pressure-demand, MSHA/NIOSH and full protective gear. Keep away from fire, sparks and heated r tightly closed. Cool containers / tanks with water spray. Fire or violent rupture of packages. can lead to release of irritating gases and vapours. Burning produce |
| stopped, administer artificent and stopped, administer artificent attractions for stopped, administer artificent attraction stopped, administer artificent attraction attraction stopped, administer artificent attraction | icial respiration. Get medical attention immediately. Induce vomiting. Call a physician or Poison Control Centre anything by mouth to an unconscious person. TING MEASURES CO2). Dry chemical. Water spray. Use extinguishing measures that circumstances and the surrounding environment. contained breathing apparatus pressure-demand, MSHA/NIOSH and full protective gear. Keep away from fire, sparks and heated r tightly closed. Cool containers / tanks with water spray. Fire or violent rupture of packages. can lead to release of irritating gases and vapours. Burning produce |
| immediately. Never give 5. FIRE-FIGHT Flammable Properties Suitable Extinguishing Media Protective Equipment and Precautions for Firefighters Specific Hazards Arising from the Chemical Chemical Personal Precautions Remove all sources of ig dust or vapor. Avoid con Keep people away from a | anything by mouth to an unconscious person. TING MEASURES CO2). Dry chemical. Water spray. Use extinguishing measures that circumstances and the surrounding environment. contained breathing apparatus pressure-demand, MSHA/NIOSH and full protective gear. Keep away from fire, sparks and heated r tightly closed. Cool containers / tanks with water spray. Fire or violent rupture of packages. can lead to release of irritating gases and vapours. Burning produce |
| Flammable PropertiesNo information availableSuitable Extinguishing MediaFoam. Carbon dioxide (C are appropriate to local or Protective Equipment and Precautions for FirefightersAs in any fire, wear self- (approved or equivalent) surfaces. Keep container intense heat may cause or Specific Hazards Arising from the ChemicalThermal decomposition or obnoxious and toxic fumePersonal PrecautionsRemove all sources of ig dust or vapor. Avoid con Keep people away from a | CO2). Dry chemical. Water spray. Use extinguishing measures that circumstances and the surrounding environment. contained breathing apparatus pressure-demand, MSHA/NIOSH and full protective gear. Keep away from fire, sparks and heated r tightly closed. Cool containers / tanks with water spray. Fire or violent rupture of packages. can lead to release of irritating gases and vapours. Burning produce |
| Suitable Extinguishing MediaFoam. Carbon dioxide (Care appropriate to local of are appropriate to local of approved or equivalent) surfaces. Keep container intense heat may cause of the are appropriate to local of an are approved or equivalent) surfaces. Keep container intense heat may cause of a bonoxious and toxic function of a bonoxious and toxic function.Specific Hazards Arising from the ChemicalThermal decomposition of abonoxious and toxic function.Personal PrecautionsRemove all sources of ig dust or vapor. Avoid con Keep people away from a bonoxious and toxic function. | CO2). Dry chemical. Water spray. Use extinguishing measures that circumstances and the surrounding environment. contained breathing apparatus pressure-demand, MSHA/NIOSH and full protective gear. Keep away from fire, sparks and heated r tightly closed. Cool containers / tanks with water spray. Fire or violent rupture of packages. can lead to release of irritating gases and vapours. Burning produce |
| Protective Equipment and Precautions for Firefighters As in any fire, wear self-or (approved or equivalent) surfaces. Keep container intense heat may cause Specific Hazards Arising from the Chemical Thermal decomposition of obnoxious and toxic fume 6. ACCIDENTAL R Personal Precautions Remove all sources of ig dust or vapor. Avoid con Keep people away from a | circumstances and the surrounding environment. contained breathing apparatus pressure-demand, MSHA/NIOSH and full protective gear. Keep away from fire, sparks and heated r tightly closed. Cool containers / tanks with water spray. Fire or violent rupture of packages. can lead to release of irritating gases and vapours. Burning produce |
| Precautions for Firefighters (approved or equivalent) surfaces. Keep container intense heat may cause Specific Hazards Arising from the Chemical Thermal decomposition of obnoxious and toxic fume 6. ACCIDENTAL R Personal Precautions Remove all sources of ig dust or vapor. Avoid con Keep people away from a | and full protective gear. Keep away from fire, sparks and heated r tightly closed. Cool containers / tanks with water spray. Fire or violent rupture of packages. can lead to release of irritating gases and vapours. Burning produce |
| Chemical obnoxious and toxic fumiliary 6. ACCIDENTAL R Personal Precautions Remove all sources of ig dust or vapor. Avoid con Keep people away from a | |
| Personal Precautions Remove all sources of ig dust or vapor. Avoid con Keep people away from a | |
| dust or vapor. Avoid con Keep people away from a | RELEASE MEASURES |
| Methods for Cleaning Up Contain spillage, soak up | nition. Heat, flames and sparks. Ventilate the area. Avoid breathing tact with skin, eyes and clothing. Evacuate personnel to safe areas. and upwind of spill/leak. |
| diatomaceous earth, veri | p with non-combustible absorbent material, (e.g. sand, earth, miculite) and transfer to a container for disposal according to local / e section 13). Do not use sparking tools. |
| | tering drains. Prevent further leakage or spillage if safe to do so. If s rivers and lakes or drains inform respective authorities. |
| 7. HANDLING | GAND STORAGE |
| contaminated clothing be | eyes and clothing. Ensure adequate ventilation. Remove and wash efore re-use. Discard contaminated shoes. When using do not bels and material safety data sheets for the working chemicals. Do ful or fatal if swallowed. |
| when not in use. Keep ou | losed in a dry, cool and well-ventilated place. Keep container closed ut of the reach of children. Keep away from heat and sources of |
| 8. EXPOSURE CONTROLS | ne directions of use on the label. |

| Component | European Union | The United Kingdom | France | Spain | Germany |
|---------------------------|----------------|----------------------|--------------------------------|----------------------------------|----------------------------------|
| Ethylene glycol monobutyl | | STEL: 50 ppm TWA: 20 | VME: 2 ppm VME: 13.3 | Skin VLA-EC: 333 | MAK: 10 ppm MAK: 66 |
| ether acetate | | ppm Skin | mg/m ³ VLCT: 30 ppm | mg/m ³ VLA-EC: 50 ppm | mg/m ³ Skin Peak: 132 |
| | | | VLCT: 199.8 mg/m ³ | VLA-ED: 133 mg/m ³ | mg/m ³ Peak: 20 ppm |
| | | | Skin | VLA-ED: 20 ppm | |

| Component | Italy | Portugal | The Netherlands | Finland | Austria |
|---------------------------|---------------------------------|------------------|----------------------------------|---------------------------------|----------------------------------|
| Ethylene glycol monobutyl | TWA: 133 mg/m ³ TWA: | TWA: 20 ppm Skin | Skin STEL: 333 mg/m ³ | TWA: 20 ppm TWA: | Skin STEL: 40 ppm |
| ether acetate | 20 ppm STEL: 333 | notation | TWA: 135 mg/m ³ | 130 mg/m ³ STEL: 50 | STEL: 270 mg/m ³ MAK: |
| | mg/m ³ STEL: 50 ppm | | _ | ppm STEL: 330 mg/m ³ | 20 ppm MAK: 133 |
| | Skin | | | Skin | mg/m ³ |

| Component | Switzerland | Poland | Norway | Ireland | Denmark |
|---------------------------|-----------------------------------|------------------------------|--------------------------------|---------------------------------|---------------------------------|
| Ethylene glycol monobutyl | Skin STEL: 80 ppm | NDSCh: 300 mg/m ³ | TWA: 65 mg/m ³ TWA: | TWA: 20 ppm TWA: | TWA: 130 mg/m ³ TWA: |
| ether acetate | STEL: 540 mg/m ³ MAK: | NDS: 100 mg/m ³ | 10 ppm Skin | 133 mg/m ³ STEL: 50 | 20 ppm Skin |
| | 20 ppm MAK: 135 | | | ppm STEL: 333 mg/m ³ | |
| | mg/m ³ | | | Skin | |
| Dimethyl Glutarate | STEL: 20 mg/m ³ STEL: | | | | |
| - | 3 ppm MAK: 3 ppm | | | | |
| | MAK: 20 mg/m ³ | | | | |
| Dimethyl Adipate | STEL: 1 mg/m ³ STEL: | | | | |
| | 0.14 ppm MAK: 1 mg/m ³ | | | | |
| | MAK: 0.14 ppm | | | | |

Occupational exposure controls

| Engineering Measures | Use only with adequate ventilation. Use ventilation adequate to keep exposures below recommended exposure limits. See MSDS. In case of insufficient ventilation, wear suitable respiratory equipment. | | | | |
|---------------------------------|---|--|--|--|--|
| Personal Protective Equipment | | | | | |
| Respiratory Protection | Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Respirator with a vapour filter. | | | | |
| Eye Protection | Ensure that eyewash stations and safety showers are close to the workstation location. Avoid contact with eyes. Safety glasses with side-shields. Goggles. Face-shield. | | | | |
| Skin Protection | Wear protective gloves/clothing. Solvent-resistant apron and boots. | | | | |
| Hand Protection | Nitrile rubber. Neoprene gloves. | | | | |
| General Hygiene Considerations | Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before eating, drinking, or smoking. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. | | | | |
| Environmental exposure controls | No information available | | | | |
| 9. | 9. PHYSICAL AND CHEMICAL PROPERTIES | | | | |

| 9. PHYSICAL AND CHEMICAL PROPERTIES | | | | | | |
|-------------------------------------|--------------------------|---|--------------|--------------------------|--|--|
| Appearance | Viscous liquid | Physical State | | Liquid | | |
| Odor | Characteristic | Odor Threshold | | No information available | | |
| рН | No information available | Autoignition Temperature | | No information available | | |
| Boiling point/Boiling Range | >149°C / >300°F | Melting Point/Ra | inge | No information available | | |
| Freezing Point/Range | No information available | Solubility | | No information available | | |
| Evaporation Rate | No information available | Partition Coefficient (n- octanol/water) | | No information available | | |
| Vapour Pressure | No information available | Vapour Density | | No information available | | |
| Flammability (solid, gas) | No information available | | | | | |
| Flammability Limits in Air | | Flash Point | 67°C / 153°F | = | | |
| Upper No information available | | Method | Closed cup | | | |
| Lower No information availa | able | | | | | |
| | | Photochemically | Reactive | No | | |
| Weight Per Gallon (Ibs/gal) | 8.203 | Specific Gravity | | 0.984 | | |
| 10. STABILITY AND REACTIVITY | | | | | | |

| Chemical Stability | Stable under normal conditions. |
|------------------------------------|---|
| Conditions to Avoid | Heat, flames and sparks. |
| Incompatible Products | Strong acids. Strong bases. Strong oxidizing agents. Reducing agents. |
| Hazardous Decomposition Products | Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO2). Carbon monoxide. |
| Possibility of Hazardous Reactions | None under normal processing. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------------------------|------------------|---------------------|---------------------|
| Diethylene glycol diethyl ether | 4970 mg/kg (Rat) | 6700 µL/kg (Rabbit) | |
| Gamma Butyrolactone | 1540 mg/kg (Rat) | | 2.68 mg/L (Rat) 4 h |
| Ethylene glycol monobutyl ether | 1600 mg/kg (Rat) | 1480 mg/kg (Rabbit) | |
| acetate | | | |
| Dimethyl Glutarate | 8191 mg/kg (Rat) | | 5.6 mg/L (Rat)4 h |
| Dimethyl Adipate | 1920 mg/kg (Rat) | | |

Chronic Toxicity

No information available

| Sensitisation | No information available |
|-----------------------|--------------------------|
| Neurological Effects | No information available |
| Mutagenic Effects | No information available |
| Reproductive Effects | No information available |
| Developmental Effects | No information available |
| Teratogenicity | No information available |
| Chronic Effects | No information available |
| Target Organ Effects | No information available |

12. ECOLOGICAL INFORMATION

Ecotoxicity

12. ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. We have no quantitative data concerning the ecological effects of this product. Environmental fate information is derived from consideration of the properties of the ingredients. Should not be released into the environment.

| Component | Freshwater Algae | Freshwater Fish | Water Flea |
|---------------------------------|-----------------------------------|------------------------------------|----------------------------------|
| Gamma Butyrolactone | 72 Hr EC50 Scenedesmus | 96 Hr LC50 Leuciscus idus: 220-460 | 48 Hr EC50 Daphnia magna Straus: |
| | subspicatus: 360 mg/L; 96 Hr EC50 | mg/L [static] | >500 mg/L |
| | Scenedesmus subspicatus: 79 mg/L | | _ |
| Ethylene glycol monobutyl ether | 72 Hr EC50 Scenedesmus | | 48 Hr EC50 water flea: 37 mg/L |
| acetate | subspicatus: >500 mg/L | | _ |
| Dimethyl Glutarate | | 96 Hr LC50 Pimephales promelas: | 48 Hr EC50 Daphnia magna: 122.1- |
| | | 19.6-26.2 mg/L [static] | 163.5 mg/L |

Persistence and Degradability Bioaccumulation Mobility in Environmental Media

No information available No information available No information available

| Component | log Pow |
|---|---------|
| Gamma Butyrolactone | -0.566 |
| Ethylene glycol monobutyl ether acetate | 1.51 |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Dispose of contents/container in accordance with local regulation.

Contaminated Packaging

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

14. TRANSPORT INFORMATION

RID

Not classified as dangerous in the meaning of transport regulations

ADR

Not classified as dangerous in the meaning of transport regulations **IMDG/IMO**

Not classified as dangerous in the meaning of transport regulations

ICAO/IATA

Not classified as dangerous in the meaning of transport regulations

15. REGULATORY INFORMATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC

Labelling

Symbol(s)

Xn

Xn - Harmful



R -phrase(s)
 R22 - Harmful if swallowed
 R36 - Irritating to eyes
 R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S -phrase(s)

S 2 - Keep out of the reach of children S25 - Avoid contact with eyes S46 - If swallowed, seek medical advice immediately and show this container or label

International Inventories

Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

REACH: Substances of Very High Concern (SVHC): Article 57 of Regulation (EC) No 1907/2006

Does NOT contain a listed substance

16. OTHER INFORMATION

Text of R phrases mentioned in Section 3

R36 - Irritating to eyes R22 - Harmful if swallowed R53 - May cause long-term adverse effects in the aquatic environment R52 - Harmful to aquatic organisms R20/21 - Harmful by inhalation and in contact with skin R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Revision Summary New MSDS format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



SAFETY DATA SHEET

According to EC Directive 2001/58/EC Revision Date Nov-20-2009

Print Date Nov-20-2009

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

Product code Product name **Product description**

OSIROBK Optimizer Black (22386 - 440 ml, 22416 - 1L) Eco Solvent Ink for Roland (OSI-RO)

Manufacturer or supplier's details GERMANY DATAPLOT GmbH Gutenbergstraße 15 D-24558 Henstedt-Ulzburg Tel.: +49 4193-9950 Fax: +49 4193-995220

Emergency Telephone Number GERMANY Giftzentrale Mainz Tel.: +49 6131/192-40

2. HAZARDS IDENTIFICATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

.

Classification

Xi:R36 - R52/53 Xi - Irritant



Most Important Hazards

Irritating to eyes Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

| Appearance Emergency Overview | Viscous liquid Harmful to aquatic organisms. Irritant. |
|----------------------------------|---|
| Eyes | May cause eye irritation. |
| Skin | May cause skin irritation and/or dermatitis. |
| Inhalation | May cause irritation of respiratory tract. Inhalation of high vapour concentrations may cause |
| | symptoms like headache, dizziness, tiredness, nausea and vomiting. |
| Ingestion | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | EC No. | CAS-No | Weight % | Classification |
|---|-------------------------|-----------|----------|------------------|
| Diethylene glycol diethyl ether | 203-963-7 | 112-36-7 | 60 - 70 | Xi;R36 |
| Gamma Butyrolactone | 202-509-5 | 96-48-0 | 10 - 20 | Xn;R22 Xi;R36 |
| Ethylene glycol monobutyl ether acetate | 203-933-3 | 112-07-2 | 5 - 10 | Xn;R20/21 |
| Dimethyl Glutarate | 214-277-2 | 1119-40-0 | 5 - 10 | Xi;R36/38 |
| Carbon black | 215-609-9 435- 640-3 | 1333-86-4 | 1 - 5 | - |
| Dimethyl Adipate | 211-020-6 | 627-93-0 | 1 - 5 | Xn;R22 |

For the full text of the R-phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | 4. FIRST AID MEASURES |
|--|--|
| 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 immediately if irritation develops and persists. |
| Skin Contact | Wash off immediately with soap and plenty of water. Use a mild soap if available. Rinse immediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation develops, get medical attention. |
| Inhalation | Move to fresh air. If breathed in, move person into fresh air. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately. |
| Ingestion | If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person. |
| | 5. FIRE-FIGHTING MEASURES |
| Flammable Properties | No information available |
| Suitable Extinguishing Media | Foam. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Protective Equipment and Precautions for Firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Keep away from fire, sparks and heated surfaces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or intense heat may cause violent rupture of packages. |
| Specific Hazards Arising from the Chemical | Thermal decomposition can lead to release of irritating gases and vapours. Burning produces obnoxious and toxic fumes. |
| | 6. ACCIDENTAL RELEASE MEASURES |
| Personal Precautions | Remove all sources of ignition. Heat, flames and sparks. Ventilate the area. Avoid breathing dust or vapor. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. |
| Methods for Cleaning Up | Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Do not use sparking tools. |
| Environmental Precautions | Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities. |
| | 7. HANDLING AND STORAGE |
| Handling | Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove and wash contaminated clothing before re-use. Discard contaminated shoes. When using do not smoke. Take notice of labels and material safety data sheets for the working chemicals. Do not take internally. Harmful or fatal if swallowed. |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep out of the reach of children. Keep away from heat and sources of ignition. Take notice of the directions of use on the label. |
| 8. EXP | OSURE CONTROLS / PERSONAL PROTECTION |
| Exposure limits | |
| | |

According to EC Directive 2001/58/EC

| Component | European Union | The United Kingdom | France | Spain | Germany |
|---------------------------|----------------|--------------------------------|--------------------------------|----------------------------------|----------------------------------|
| Ethylene glycol monobutyl | | STEL: 50 ppm TWA: 20 | VME: 2 ppm VME: 13.3 | Skin VLA-EC: 333 | MAK: 10 ppm MAK: 66 |
| ether acetate | | ppm Skin | mg/m ³ VLCT: 30 ppm | mg/m ³ VLA-EC: 50 ppm | mg/m ³ Skin Peak: 132 |
| | | | VLCT: 199.8 mg/m ³ | VLA-ED: 133 mg/m ³ | mg/m ³ Peak: 20 ppm |
| | | | Skin | VLA-ED: 20 ppm | |
| Carbon black | | STEL: 7 mg/m ³ TWA: | VME: 3.5 mg/m ³ | VLA-ED: 3.5 mg/m ³ | |
| | | 3.5 mg/m ³ | - | _ | |

| Component | Italy | Portugal | The Netherlands | Finland | Austria |
|---------------------------|---------------------------------|----------------------------|----------------------------------|----------------------------------|----------------------------------|
| Ethylene glycol monobutyl | TWA: 133 mg/m ³ TWA: | TWA: 20 ppm Skin | Skin STEL: 333 mg/m ³ | TWA: 20 ppm TWA: | Skin STEL: 40 ppm |
| ether acetate | 20 ppm STEL: 333 | notation | TWA: 135 mg/m ³ | 130 mg/m ³ STEL: 50 | STEL: 270 mg/m ³ MAK: |
| | mg/m ³ STEL: 50 ppm | | | ppm STEL: 330 mg/m ³ | 20 ppm MAK: 133 |
| | Skin | | | Skin | mg/m ³ |
| Carbon black | | TWA: 3.5 mg/m ³ | | TWA: 3.5 mg/m ³ STEL: | |
| | | 0 | | 7 mg/m ³ | |

| Component | Switzerland | Poland | Norway | Ireland | Denmark |
|---------------------------|-----------------------------------|------------------------------|--------------------------------|----------------------------------|---------------------------------|
| Ethylene glycol monobutyl | Skin STEL: 80 ppm | NDSCh: 300 mg/m ³ | TWA: 65 mg/m ³ TWA: | TWA: 20 ppm TWA: | TWA: 130 mg/m ³ TWA: |
| ether acetate | STEL: 540 mg/m ³ MAK: | NDS: 100 mg/m ³ | 10 ppm Skin | 133 mg/m ³ STEL: 50 | 20 ppm Skin |
| | 20 ppm MAK: 135 | • | | ppm STEL: 333 mg/m ³ | |
| | mg/m ³ | | | Skin | |
| Dimethyl Glutarate | STEL: 20 mg/m ³ STEL: | | | | |
| | 3 ppm MAK: 3 ppm | | | | |
| | MAK: 20 mg/m ³ | | | | |
| Carbon black | | NDS: 4.0 mg/m ³ | TWA: 3.5 mg/m ³ | TWA: 3.5 mg/m ³ STEL: | TWA: 3.5 mg/m ³ |
| | | - | | 7 mg/m ³ | - |
| Dimethyl Adipate | STEL: 1 mg/m ³ STEL: | | | | |
| | 0.14 ppm MAK: 1 mg/m ³ | | | | |
| | MAK: 0.14 ppm | | | | |

Occupational exposure controls

| Engineering Measures | Use only with adequate ventilation. Use ventilation adequate to keep exposures below recommended exposure limits. See MSDS. In case of insufficient ventilation, wear suitable respiratory equipment. | | |
|---|---|--|--|
| Personal Protective Equipment Respiratory Protection Eye Protection | Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Respirator with a vapour filter. Ensure that eyewash stations and safety showers are close to the workstation location. Avoid | | |
| Skin Protection Hand Protection | contact with eyes. Safety glasses with side-shields. Goggles. Face-shield. Wear protective gloves/clothing. Solvent-resistant apron and boots. Nitrile rubber. Neoprene gloves. | | |
| General Hygiene Considerations | Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before eating, drinking, or smoking. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. | | |
| Environmental exposure controls | No information available | | |
| 9. PHYSICAL AND CHEMICAL PROPERTIES | | | |

| | 9. PHYSICAL AND C | HEMICAL PR | OPERTIES | | |
|------------------------------|--|---|-------------|--------------------------|--|
| Appearance | Viscous liquid | Physical State | | Liquid | |
| Odor | Characteristic | Odor Threshold | l | No information available | |
| рН | No information available | Autoignition Te | mperature | No information available | |
| Boiling point/Boiling Range | >149°C / >300°F | Melting Point/R | ange | No information available | |
| Freezing Point/Range | No information available | Solubility | | No information available | |
| Evaporation Rate | No information available | Partition Coefficient (n- octanol/water) | | No information available | |
| Vapour Pressure | No information available | Vapour Density | | No information available | |
| Flammability (solid, gas) | No information available | | | | |
| Flammability Limits in Air | | Flash Point | 67°C / 153° | F | |
| | Upper No information available Method Closed cup | | | | |
| Lower No information availa | able | | | | |
| | | Photochemicall | y Reactive | No | |
| Weight Per Gallon (Ibs/gal) | 8.159 | Specific Gravity | / | 0.979 | |
| 10. STABILITY AND REACTIVITY | | | | | |

| Chemical Stability | Stable under normal conditions. |
|------------------------------------|---|
| Conditions to Avoid | Heat, flames and sparks. |
| Incompatible Products | Strong acids. Strong bases. Strong oxidizing agents. Reducing agents. |
| Hazardous Decomposition Products | Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO2). Carbon monoxide. |
| Possibility of Hazardous Reactions | None under normal processing. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------------------------|-------------------|---------------------|---------------------|
| Diethylene glycol diethyl ether | 4970 mg/kg (Rat) | 6700 µL/kg (Rabbit) | |
| Gamma Butyrolactone | 1540 mg/kg (Rat) | | 2.68 mg/L (Rat) 4 h |
| Ethylene glycol monobutyl ether | 1600 mg/kg (Rat) | 1480 mg/kg (Rabbit) | |
| acetate | | | |
| Dimethyl Glutarate | 8191 mg/kg (Rat) | | 5.6 mg/L (Rat) 4 h |
| Carbon black | 15400 mg/kg (Rat) | 3 g/kg (Rabbit) | |
| Dimethyl Adipate | 1920 mg/kg (Rat) | | |

Chronic Toxicity No information available

| Sensitisation | No information available |
|-----------------------|--------------------------|
| Neurological Effects | No information available |
| Mutagenic Effects | No information available |
| Reproductive Effects | No information available |
| Developmental Effects | No information available |
| Teratogenicity | No information available |
| Chronic Effects | No information available |
| Target Organ Effects | No information available |

12. ECOLOGICAL INFORMATION

Ecotoxicity

12. ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. We have no quantitative data concerning the ecological effects of this product. Environmental fate information is derived from consideration of the properties of the ingredients. Should not be released into the environment.

| Component | Freshwater Algae | Freshwater Fish | Water Flea |
|---------------------------------|-----------------------------------|------------------------------------|----------------------------------|
| Gamma Butyrolactone | 72 Hr EC50 Scenedesmus | 96 Hr LC50 Leuciscus idus: 220-460 | 48 Hr EC50 Daphnia magna Straus: |
| | subspicatus: 360 mg/L; 96 Hr EC50 | mg/L [static] | >500 mg/L |
| | Scenedesmus subspicatus: 79 mg/L | | - |
| Ethylene glycol monobutyl ether | 72 Hr EC50 Scenedesmus | | 48 Hr EC50 water flea: 37 mg/L |
| acetate | subspicatus: >500 mg/L | | _ |
| Dimethyl Glutarate | | 96 Hr LC50 Pimephales promelas: | 48 Hr EC50 Daphnia magna: 122.1- |
| | | 19.6-26.2 mg/L [static] | 163.5 mg/L |
| Carbon black | | | 24 Hr EC50 Daphnia magna: >5600 |
| | | | mg/L |

Persistence and Degradability Bioaccumulation Mobility in Environmental Media

No information available No information available No information available

| Component | log Pow |
|---|---------|
| Gamma Butyrolactone | -0.566 |
| Ethylene glycol monobutyl ether acetate | 1.51 |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Dispose of contents/container in accordance with local regulation.

Contaminated Packaging

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

14. TRANSPORT INFORMATION

<u>RID</u>

Not classified as dangerous in the meaning of transport regulations

ADR

Not classified as dangerous in the meaning of transport regulations

IMDG/IMO

Not classified as dangerous in the meaning of transport regulations

ICAO/IATA

Not classified as dangerous in the meaning of transport regulations

15. REGULATORY INFORMATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC

Labelling

Symbol(s)

Xi - Irritant



R -phrase(s) R36 - Irritating to eyes R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S -phrase(s)

S 2 - Keep out of the reach of children
S25 - Avoid contact with eyes
S46 - If swallowed, seek medical advice immediately and show this container or label

International Inventories

Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

REACH: Substances of Very High Concern (SVHC): Article 57 of Regulation (EC) No 1907/2006

Does NOT contain a listed substance

16. OTHER INFORMATION

Text of R phrases mentioned in Section 3

R36 - Irritating to eyes R22 - Harmful if swallowed R53 - May cause long-term adverse effects in the aquatic environment R52 - Harmful to aquatic organisms R20/21 - Harmful by inhalation and in contact with skin R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Revision Summary New MSDS format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



SAFETY DATA SHEET

According to EC Directive 2001/58/EC Revision Date Nov-20-2009

Print Date Nov-20-2009

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

Product code Product name Product description

OSIROML Optimizer Light Magenta (22388 - 440 ml, 22418 - 1L) Eco Solvent Ink for Roland (OSI-RO)

Manufacturer or supplier's details GERMANY DATAPLOT GmbH Gutenbergstraße 15 D-24558 Henstedt-Ulzburg Tel.: +49 4193-9950 Fax: +49 4193-995220

Emergency Telephone Number GERMANY Giftzentrale Mainz Tel.: +49 6131/192-40

2. HAZARDS IDENTIFICATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

.

Classification

Xi;R36 Xi - Irritant



Most Important Hazards

Irritating to eyes

Appearance
Emergency OverviewViscous liquid
Irritant.Eyes
Skin
InhalationMay cause eye irritation.
May cause skin irritation and/or dermatitis.
May cause irritation of respiratory tract. Inhalation of high vapour concentrations may cause
symptoms like headache, dizziness, tiredness, nausea and vomiting.
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

3. COMPOSITION/INFORMATION ON INGREDIENTS

For the full text of the R-phrases mentioned in this Section, see Section 16

| 4. FIRST AID MEASURES | | | |
|-----------------------|--|--|--|
| 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 immediately if irritation develops and persists. | | |
| Skin Contact | Wash off immediately with soap and plenty of water. Use a mild soap if available. Rinse immediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation develops, get medical attention. | | |
| Inhalation | Move to fresh air. If breathed in, move person into fresh air. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately. | | |

| Ingestion | If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person. | | |
|--|--|--|--|
| | 5. FIRE-FIGHTING MEASURES | | |
| Flammable Properties | No information available | | |
| Suitable Extinguishing Media | Foam. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. | | |
| Protective Equipment and Precautions for Firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Keep away from fire, sparks and heated surfaces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or intense heat may cause violent rupture of packages. | | |
| Specific Hazards Arising from the Chemical | Thermal decomposition can lead to release of irritating gases and vapours. Burning produces obnoxious and toxic fumes. | | |
| | 6. ACCIDENTAL RELEASE MEASURES | | |
| Personal Precautions | Remove all sources of ignition. Heat, flames and sparks. Ventilate the area. Avoid breathing dust or vapor. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. | | |
| Methods for Cleaning Up | Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Do not use sparking tools. | | |
| Environmental Precautions | Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities. | | |
| | 7. HANDLING AND STORAGE | | |
| Handling | Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove and wash contaminated clothing before re-use. Discard contaminated shoes. When using do not smoke. Take notice of labels and material safety data sheets for the working chemicals. Do not take internally. Harmful or fatal if swallowed. | | |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep out of the reach of children. Keep away from heat and sources of ignition. Take notice of the directions of use on the label. | | |
| 8. EXPC | SURE CONTROLS / PERSONAL PROTECTION | | |
| Exposure limits | | | |
| Occupational exposure controls | | | |
| Engineering Measures | Use only with adequate ventilation. Use ventilation adequate to keep exposures below recommended exposure limits. See MSDS. In case of insufficient ventilation, wear suitable respiratory equipment. | | |
| Personal Protective Equipment Respiratory Protection | Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or | | |
| Eye Protection | in case of product release (dust). Respirator with a vapour filter. Ensure that eyewash stations and safety showers are close to the workstation location. Avoid | | |
| Skin Protection Hand Protection | contact with eyes. Safety glasses with side-shields. Goggles. Face-shield. Wear protective gloves/clothing. Solvent-resistant apron and boots. Nitrile rubber. Neoprene gloves. | | |

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before eating, drinking, or smoking. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection.

Environmental exposure controls

No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

| Appearance Odor pH Boiling point/Boiling Range Freezing Point/Range | Viscous liquid Characteristic No information available >149°C / >300°F No information available | Physical State Odor Threshold Autoignition Ter Melting Point/Ra Solubility | mperature ange | Liquid No information available No information available No information available No information available |
|--|---|--|----------------------------|--|
| Evaporation Rate | No information available | Partition Coeffic octanol/water) | cient (n- | No information available |
| Vapour Pressure Flammability (solid, gas) | No information available No information available | Vapour Density | | No information available |
| Flammability Limits in Air Upper No information avail Lower No information avail | | Flash Point Method | 67°C / 153°l Closed cup | F |
| | | Photochemicall | y Reactive | No |
| Weight Per Gallon (Ibs/gal) | 8.045 | Specific Gravity | | 0.966 |

10. STABILITY AND REACTIVITY

| Chemical Stability | Stable under normal conditions. |
|------------------------------------|---|
| Conditions to Avoid | Heat, flames and sparks. |
| Incompatible Products | Strong acids. Strong bases. Strong oxidizing agents. Reducing agents. |
| Hazardous Decomposition Products | Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO2). Carbon monoxide. |
| Possibility of Hazardous Reactions | None under normal processing. |

| 11 | TOXICOLOGICAL | INFORMATION |
|----|---------------|-------------|
| | | |

Acute Toxicity

Chronic Toxicity No information available

| Sensitisation | No information available |
|-----------------------|--------------------------|
| Neurological Effects | No information available |
| Mutagenic Effects | No information available |
| Reproductive Effects | No information available |
| Developmental Effects | No information available |
| Teratogenicity | No information available |
| Chronic Effects | No information available |
| Target Organ Effects | No information available |
| | |

12. ECOLOGICAL INFORMATION

Ecotoxicity

We have no quantitative data concerning the ecological effects of this product. Environmental fate information is derived from consideration of the properties of the ingredients. Should not be released into the environment.

| Persistence and Degradability | No information available |
|---------------------------------|--------------------------|
| Bioaccumulation | No information available |
| Mobility in Environmental Media | No information available |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Dispose of contents/container in accordance with local regulation.

Contaminated Packaging

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

14. TRANSPORT INFORMATION

RID

Not classified as dangerous in the meaning of transport regulations

ADR

Not classified as dangerous in the meaning of transport regulations IMDG/IMO

Not classified as dangerous in the meaning of transport regulations

ICAO/IATA

Not classified as dangerous in the meaning of transport regulations

15. REGULATORY INFORMATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC

Labelling

Symbol(s)

Xi - Irritant



R -phrase(s) R36 - Irritating to eyes

S -phrase(s)

S 2 - Keep out of the reach of children S25 - Avoid contact with eyes S46 - If swallowed, seek medical advice immediately and show this container or label

International Inventories

Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

REACH: Substances of Very High Concern (SVHC): Article 57 of Regulation (EC) No 1907/2006 Does NOT contain a listed substance

16. OTHER INFORMATION

Text of R phrases mentioned in Section 3

R36 - Irritating to eyes R22 - Harmful if swallowed R20 - Harmful by inhalation R20/21 - Harmful by inhalation and in contact with skin

| Revision Date | Nov-20-2009 |
|---------------|--------------|
| novioion Bato | 1407 20 2000 |

| Revision Summary | New MSDS format |
|------------------|-----------------|
|------------------|-----------------|

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



SAFETY DATA SHEET

According to EC Directive 2001/58/EC Revision Date Nov-20-2009

Print Date Nov-20-2009

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

Product code Product name Product description

OSIROCL Optimizer Light Cyan (22387 - 440 ml, 22417 - 1L) Eco Solvent Ink for Roland (OSI-RO)

Manufacturer or supplier's details GERMANY DATAPLOT GmbH Gutenbergstraße 15 D-24558 Henstedt-Ulzburg Tel.: +49 4193-9950 Fax: +49 4193-995220 Emergency Telephone Number GERMANY Giftzentrale Mainz Tel.: +49 6131/192-40

2. HAZARDS IDENTIFICATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

.

Classification

Xi;R36 - R52/53 Xi - Irritant



Most Important Hazards

Irritating to eyes Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

| Appearance Emergency Overview | Viscous liquid Harmful to aquatic organisms. Irritant. |
|----------------------------------|---|
| Eyes | May cause eye irritation. |
| Skin | May cause skin irritation and/or dermatitis. |
| Inhalation | May cause irritation of respiratory tract. Inhalation of high vapour concentrations may cause |
| | symptoms like headache, dizziness, tiredness, nausea and vomiting. |
| Ingestion | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | EC No. | CAS-No | Weight % | Classification |
|---|-----------|-----------|----------|------------------|
| Diethylene glycol diethyl ether | 203-963-7 | 112-36-7 | 60 - 70 | Xi;R36 |
| Gamma Butyrolactone | 202-509-5 | 96-48-0 | 10 - 20 | Xn;R22 Xi;R36 |
| Dimethyl Glutarate | 214-277-2 | 1119-40-0 | 5 - 10 | Xi;R36/38 |
| Dimethyl Adipate | 211-020-6 | 627-93-0 | 1 - 5 | Xn;R22 |
| Ethylene glycol monobutyl ether acetate | 203-933-3 | 112-07-2 | 1 - 5 | Xn;R20/21 |

For the full text of the R-phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | 4. FIRST AID MEASURES |
|--|--|
| 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 immediately if irritation develops and persists. |
| Skin Contact | Wash off immediately with soap and plenty of water. Use a mild soap if available. Rinse immediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation develops, get medical attention. |
| Inhalation | Move to fresh air. If breathed in, move person into fresh air. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately. |
| Ingestion | If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person. |
| | 5. FIRE-FIGHTING MEASURES |
| Flammable Properties | No information available |
| Suitable Extinguishing Media | Foam. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Protective Equipment and Precautions for Firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Keep away from fire, sparks and heated surfaces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or intense heat may cause violent rupture of packages. |
| Specific Hazards Arising from the Chemical | Thermal decomposition can lead to release of irritating gases and vapours. Burning produces obnoxious and toxic fumes. |
| | 6. ACCIDENTAL RELEASE MEASURES |
| Personal Precautions | Remove all sources of ignition. Heat, flames and sparks. Ventilate the area. Avoid breathing dust or vapor. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. |
| Methods for Cleaning Up | Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Do not use sparking tools. |
| Environmental Precautions | Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities. |
| | 7. HANDLING AND STORAGE |
| Handling | Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove and wash contaminated clothing before re-use. Discard contaminated shoes. When using do not smoke. Take notice of labels and material safety data sheets for the working chemicals. Do not take internally. Harmful or fatal if swallowed. |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep out of the reach of children. Keep away from heat and sources of ignition. Take notice of the directions of use on the label. |
| 8. EXP | OSURE CONTROLS / PERSONAL PROTECTION |
| Exposuro limite | |

Exposure limits

| Component | European Union | The United Kingdom | France | Spain | Germany |
|---------------------------|----------------|----------------------|--------------------------------|----------------------------------|----------------------------------|
| Ethylene glycol monobutyl | | STEL: 50 ppm TWA: 20 | VME: 2 ppm VME: 13.3 | Skin VLA-EC: 333 | MAK: 10 ppm MAK: 66 |
| ether acetate | | ppm Skin | mg/m ³ VLCT: 30 ppm | mg/m ³ VLA-EC: 50 ppm | mg/m ³ Skin Peak: 132 |
| | | | VLCT: 199.8 mg/m ³ | VLA-ED: 133 mg/m ³ | mg/m ³ Peak: 20 ppm |
| | | | Skin | VLA-ED: 20 ppm | |

| Component | Italy | Portugal | The Netherlands | Finland | Austria |
|---------------------------|---------------------------------|------------------|----------------------------------|---------------------------------|----------------------------------|
| Ethylene glycol monobutyl | TWA: 133 mg/m ³ TWA: | TWA: 20 ppm Skin | Skin STEL: 333 mg/m ³ | TWA: 20 ppm TWA: | Skin STEL: 40 ppm |
| ether acetate | 20 ppm STEL: 333 | notation | TWA: 135 mg/m ³ | 130 mg/m ³ STEL: 50 | STEL: 270 mg/m ³ MAK: |
| | mg/m ³ STEL: 50 ppm | | _ | ppm STEL: 330 mg/m ³ | 20 ppm MAK: 133 |
| | Skin | | | Skin | mg/m ³ |

| Component | Switzerland | Poland | Norway | Ireland | Denmark |
|---------------------------|-----------------------------------|------------------------------|--------------------------------|---------------------------------|---------------------------------|
| Dimethyl Glutarate | STEL: 20 mg/m ³ STEL: | | | | |
| | 3 ppm MAK: 3 ppm | | | | |
| | MAK: 20 mg/m ³ | | | | |
| Dimethyl Adipate | STEL: 1 mg/m ³ STEL: | | | | |
| | 0.14 ppm MAK: 1 mg/m ³ | | | | |
| | MAK: 0.14 ppm | | | | |
| Ethylene glycol monobutyl | Skin STEL: 80 ppm | NDSCh: 300 mg/m ³ | TWA: 65 mg/m ³ TWA: | TWA: 20 ppm TWA: | TWA: 130 mg/m ³ TWA: |
| ether acetate | STEL: 540 mg/m ³ MAK: | NDS: 100 mg/m ³ | 10 ppm Skin | 133 mg/m ³ STEL: 50 | 20 ppm Skin |
| | 20 ppm MAK: 135 | | | ppm STEL: 333 mg/m ³ | |
| | mg/m ³ | | | Skin | |

Occupational exposure controls

| Engineering Measures | Use only with adequate ventilation. Use ventilation adequate to keep exposures below recommended exposure limits. See MSDS. In case of insufficient ventilation, wear suitable respiratory equipment. |
|---|---|
| Personal Protective Equipment Respiratory Protection Eye Protection | Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Respirator with a vapour filter. Ensure that eyewash stations and safety showers are close to the workstation location. Avoid |
| Skin Protection Hand Protection | contact with eyes. Safety glasses with side-shields. Goggles. Face-shield. Wear protective gloves/clothing. Solvent-resistant apron and boots. Nitrile rubber. Neoprene gloves. |
| General Hygiene Considerations | Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before eating, drinking, or smoking. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. |
| Environmental exposure controls | No information available |
| 9. | PHYSICAL AND CHEMICAL PROPERTIES |

| | 9. PHYSICAL AND C | HEMICAL PR | OPERTIES | ; |
|------------------------------|--------------------------|----------------------------------|--------------|--------------------------|
| Appearance | Viscous liquid | Physical State | | Liquid |
| Odor | Characteristic | Odor Threshold | | No information available |
| рН | No information available | Autoignition Te | mperature | No information available |
| Boiling point/Boiling Range | >149°C / >300°F | Melting Point/Ra | ange | No information available |
| Freezing Point/Range | No information available | Solubility | | No information available |
| Evaporation Rate | No information available | Partition Coeffic octanol/water) | cient (n- | No information available |
| Vapour Pressure | No information available | Vapour Density | | No information available |
| Flammability (solid, gas) | No information available | | | |
| Flammability Limits in Air | | Flash Point | 67°C / 153°l | F |
| Upper No information availa | able | Method | Closed cup | |
| Lower No information availa | able | | | |
| | | Photochemicall | y Reactive | No |
| Weight Per Gallon (Ibs/gal) | 8.045 | Specific Gravity | , | 0.966 |
| 10. STABILITY AND REACTIVITY | | | | |

| Chemical Stability | Stable under normal conditions. |
|------------------------------------|---|
| Conditions to Avoid | Heat, flames and sparks. |
| Incompatible Products | Strong acids. Strong bases. Strong oxidizing agents. Reducing agents. |
| Hazardous Decomposition Products | Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO2). Carbon monoxide. |
| Possibility of Hazardous Reactions | None under normal processing. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------------------------|------------------|---------------------|--------------------|
| Diethylene glycol diethyl ether | 4970 mg/kg (Rat) | 6700 µL/kg (Rabbit) | |
| Gamma Butyrolactone | 1540 mg/kg (Rat) | | 2.68 mg/L (Rat)4 h |
| Dimethyl Glutarate | 8191 mg/kg (Rat) | | 5.6 mg/L (Rat)4 h |
| Dimethyl Adipate | 1920 mg/kg (Rat) | | |
| Ethylene glycol monobutyl ether | 1600 mg/kg (Rat) | 1480 mg/kg (Rabbit) | |
| acetate | , , | | |

Chronic Toxicity

No information available

| Sensitisation | No information available |
|-----------------------|--------------------------|
| Neurological Effects | No information available |
| Mutagenic Effects | No information available |
| Reproductive Effects | No information available |
| Developmental Effects | No information available |
| Teratogenicity | No information available |
| Chronic Effects | No information available |
| Target Organ Effects | No information available |

12. ECOLOGICAL INFORMATION

Ecotoxicity

12. ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. We have no quantitative data concerning the ecological effects of this product. Environmental fate information is derived from consideration of the properties of the ingredients. Should not be released into the environment.

| Component | Freshwater Algae | Freshwater Fish | Water Flea |
|---------------------------------|-----------------------------------|------------------------------------|----------------------------------|
| Gamma Butyrolactone | 72 Hr EC50 Scenedesmus | 96 Hr LC50 Leuciscus idus: 220-460 | 48 Hr EC50 Daphnia magna Straus: |
| | subspicatus: 360 mg/L; 96 Hr EC50 | mg/L [static] | >500 mg/L |
| | Scenedesmus subspicatus: 79 mg/L | | |
| Dimethyl Glutarate | | 96 Hr LC50 Pimephales promelas: | 48 Hr EC50 Daphnia magna: 122.1- |
| | | 19.6-26.2 mg/L [static] | 163.5 mg/L |
| Ethylene glycol monobutyl ether | 72 Hr EC50 Scenedesmus | | 48 Hr EC50 water flea: 37 mg/L |
| acetate | subspicatus: >500 mg/L | | |

Persistence and Degradability Bioaccumulation Mobility in Environmental Media

No information available No information available No information available

| Component | log Pow |
|---|---------|
| Gamma Butyrolactone | -0.566 |
| Ethylene glycol monobutyl ether acetate | 1.51 |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Dispose of contents/container in accordance with local regulation.

Contaminated Packaging

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

14. TRANSPORT INFORMATION

RID

Not classified as dangerous in the meaning of transport regulations

ADR

Not classified as dangerous in the meaning of transport regulations **IMDG/IMO**

Not classified as dangerous in the meaning of transport regulations

ICAO/IATA

Not classified as dangerous in the meaning of transport regulations

15. REGULATORY INFORMATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC

Labelling

Symbol(s)

Xi - Irritant



R -phrase(s) R36 - Irritating to eyes R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S -phrase(s)

S 2 - Keep out of the reach of children S25 - Avoid contact with eyes S46 - If swallowed, seek medical advice immediately and show this container or label

International Inventories

Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

REACH: Substances of Very High Concern (SVHC): Article 57 of Regulation (EC) No 1907/2006

Does NOT contain a listed substance

16. OTHER INFORMATION

Text of R phrases mentioned in Section 3

R36 - Irritating to eyes

R22 - Harmful if swallowed

R53 - May cause long-term adverse effects in the aquatic environment

R52 - Harmful to aquatic organisms

R20/21 - Harmful by inhalation and in contact with skin

R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

| Revision Date | Nov-20-2009 |
|---------------|--------------|
| lionen Bate | 1101 20 2000 |

Revision Summary New MSDS format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



SAFETY DATA SHEET

According to EC Directive 2001/58/EC Revision Date Nov-19-2009

Print Date Nov-20-2009

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

Product code Product name Product description

OSIROFL Optimizer Flush (22389 - 440 ml, 22419 - 1L) Eco Solvent Ink for Roland (OSI-RO)

Manufacturer or supplier's details GERMANY DATAPLOT GmbH Gutenbergstraße 15 D-24558 Henstedt-Ulzburg Tel.: +49 4193-9950 Fax: +49 4193-995220 **Emergency Telephone Number** GERMANY Giftzentrale Mainz Tel.: +49 6131/192-40

2. HAZARDS IDENTIFICATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

.

Classification

Xn;R20/21 Xn - Harmful



Most Important Hazards

Harmful by inhalation and in contact with skin

| Appearance Emergency Overview | Water-white Harmful. |
|----------------------------------|--|
| Eyes | May cause eye irritation. |
| Skin | Harmful in contact with skin. May be absorbed through the skin in harmful amounts. May cause skin irritation and/or dermatitis. |
| Inhalation | Harmful by inhalation. Avoid breathing vapors or mists. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Inhalation of vapours is irritating to the respiratory system, may cause throat pain and cough. |
| Ingestion | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | EC No. | CAS-No | Weight % | Classification |
|---|-----------|----------|----------|----------------|
| Ethylene glycol monobutyl ether acetate | 203-933-3 | 112-07-2 | 20 - 30 | Xn;R20/21 |
| Gamma Butyrolactone | 202-509-5 | 96-48-0 | 10 - 20 | Xn;R22 |
| | | | | Xi;R36 |

For the full text of the R-phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| condev Skin Contact Wa Inhalation Movision Ingestion If summer Flammable Properties No Suitable Extinguishing Media Foa Protective Equipment and Precautions for Firefighters As if (ap) sufficience Specific Hazards Arising from the Chemical The obn 6. A 6. A | 4. FIRST AID MEASURES mediately flush with plenty of water. After initial flushing, remove any contact lenses and tinue flushing for at least 15 minutes. Get medical attention immediately if irritation velops and persists. ash off immediately with soap and plenty of water. Use a mild soap if available. Rinse mediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If tation develops, get medical attention. we to fresh air. If breathed in, move person into fresh air. If breathing is irregular or pped, administer artificial respiration. Get medical attention immediately. wallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre mediately. Never give anything by mouth to an unconscious person. 5. FIRE-FIGHTING MEASURES information available am. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that a appropriate to local circumstances and the surrounding environment. in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH opproved or equivalent) and full protective gear. Keep away from fire, sparks and heated faces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or ense heat may cause violent rupture of packages. |
|---|---|
| condev Skin Contact Wa Inhalation Movision Ingestion If summer Flammable Properties No Suitable Extinguishing Media Foa Protective Equipment and Precautions for Firefighters As if (ap) sufficience Specific Hazards Arising from the Chemical The obn 6. A 6. A | ntinue flushing for at least 15 minutes. Get medical attention immediately if irritation velops and persists. ash off immediately with soap and plenty of water. Use a mild soap if available. Rinse mediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If tation develops, get medical attention. we to fresh air. If breathed in, move person into fresh air. If breathing is irregular or pped, administer artificial respiration. Get medical attention immediately. weallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre mediately. Never give anything by mouth to an unconscious person. <i>5. FIRE-FIGHTING MEASURES</i> information available am. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that appropriate to local circumstances and the surrounding environment. in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH poroved or equivalent) and full protective gear. Keep away from fire, sparks and heated faces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or ense heat may cause violent rupture of packages. ermal decomposition can lead to release of irritating gases and vapours. Burning produce: |
| imn Inhalation Movestop Ingestion If swimm Flammable Properties No Suitable Extinguishing Media Foa are Protective Equipment and Precautions for Firefighters As if (app surface) Specific Hazards Arising from the Chemical The obn 6. A A | mediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If tation develops, get medical attention. we to fresh air. If breathed in, move person into fresh air. If breathing is irregular or pped, administer artificial respiration. Get medical attention immediately. wallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre mediately. Never give anything by mouth to an unconscious person. <u>5. FIRE-FIGHTING MEASURES</u> information available am. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that a appropriate to local circumstances and the surrounding environment. in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH oproved or equivalent) and full protective gear. Keep away from fire, sparks and heated faces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or ense heat may cause violent rupture of packages. |
| Ingestion If so imm Flammable Properties No Suitable Extinguishing Media Foa are Protective Equipment and As imm Precautions for Firefighters (app surfactor) Specific Hazards Arising from the Chemical The obn 6. A | administer artificial respiration. Get medical attention immediately. awallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre mediately. Never give anything by mouth to an unconscious person. 5. FIRE-FIGHTING MEASURES information available am. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that appropriate to local circumstances and the surrounding environment. in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH oproved or equivalent) and full protective gear. Keep away from fire, sparks and heated faces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or ense heat may cause violent rupture of packages. |
| imm Flammable Properties No Suitable Extinguishing Media Foa are Protective Equipment and As if (app surface) Precautions for Firefighters (app surface) Specific Hazards Arising from the Chemical The obn 6. A | mediately. Never give anything by mouth to an unconscious person. 5. FIRE-FIGHTING MEASURES information available am. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that appropriate to local circumstances and the surrounding environment. in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH oproved or equivalent) and full protective gear. Keep away from fire, sparks and heated faces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or ense heat may cause violent rupture of packages. ermal decomposition can lead to release of irritating gases and vapours. Burning produces |
| Suitable Extinguishing MediaFoa areProtective Equipment and Precautions for FirefightersAs is (app surf inteSpecific Hazards Arising from the ChemicalThe obn6. A | information available am. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that appropriate to local circumstances and the surrounding environment. in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH oproved or equivalent) and full protective gear. Keep away from fire, sparks and heated faces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or ense heat may cause violent rupture of packages. ermal decomposition can lead to release of irritating gases and vapours. Burning produces |
| Suitable Extinguishing MediaFoa areProtective Equipment and Precautions for FirefightersAs is (app surf inteSpecific Hazards Arising from the ChemicalThe obn6. A | am. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that appropriate to local circumstances and the surrounding environment. in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH oproved or equivalent) and full protective gear. Keep away from fire, sparks and heated faces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or ense heat may cause violent rupture of packages. ermal decomposition can lead to release of irritating gases and vapours. Burning produces |
| Protective Equipment and As if Precautions for Firefighters (ap) Specific Hazards Arising from the The obn Chemical 6. A | e appropriate to local circumstances and the surrounding environment. in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH oproved or equivalent) and full protective gear. Keep away from fire, sparks and heated faces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or ense heat may cause violent rupture of packages. ermal decomposition can lead to release of irritating gases and vapours. Burning produces |
| Precautions for Firefighters (ap surfactor) Surfactoria Surfactoria Specific Hazards Arising from the Chemical The obn 6. A | pproved or equivalent) and full protective gear. Keep away from fire, sparks and heated faces. Keep container tightly closed. Cool containers / tanks with water spray. Fire or ense heat may cause violent rupture of packages. ermal decomposition can lead to release of irritating gases and vapours. Burning produces |
| Chemical obn | |
| | |
| Personal Precautions Rer | ACCIDENTAL RELEASE MEASURES |
| dus | move all sources of ignition. Heat, flames and sparks. Ventilate the area. Avoid breathing st or vapor. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. ep people away from and upwind of spill/leak. |
| diat | ntain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, tomaceous earth, vermiculite) and transfer to a container for disposal according to local / tional regulations (see section 13). Do not use sparking tools. |
| | event product from entering drains. Prevent further leakage or spillage if safe to do so. If product contaminates rivers and lakes or drains inform respective authorities. |
| | 7. HANDLING AND STORAGE |
| con | oid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove and wash ntaminated clothing before re-use. Discard contaminated shoes. When using do not oke. Take notice of labels and material safety data sheets for the working chemicals. Do t take internally. Harmful or fatal if swallowed. |
| whe | ep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed en not in use. Keep out of the reach of children. Keep away from heat and sources of ition. Take notice of the directions of use on the label. |
| 8. EXPOSL | JRE CONTROLS / PERSONAL PROTECTION |
| Exposure limits | |

| Component | European Union | The United Kingdom | France | Spain | Germany |
|---------------------------|----------------|----------------------|--------------------------------|----------------------------------|----------------------------------|
| Ethylene glycol monobutyl | | STEL: 50 ppm TWA: 20 | VME: 2 ppm VME: 13.3 | Skin VLA-EC: 333 | MAK: 10 ppm MAK: 66 |
| ether acetate | | ppm Skin | mg/m ³ VLCT: 30 ppm | mg/m ³ VLA-EC: 50 ppm | mg/m ³ Skin Peak: 132 |
| | | | VLCT: 199.8 mg/m ³ | VLA-ED: 133 mg/m ³ | mg/m ³ Peak: 20 ppm |
| | | | Skin | VLA-ED: 20 ppm | |

| Component | Italy | Portugal | The Netherlands | Finland | Austria |
|---------------------------|---------------------------------|------------------|----------------------------------|---------------------------------|----------------------------------|
| Ethylene glycol monobutyl | TWA: 133 mg/m ³ TWA: | TWA: 20 ppm Skin | Skin STEL: 333 mg/m ³ | TWA: 20 ppm TWA: | Skin STEL: 40 ppm |
| ether acetate | 20 ppm STEL: 333 | notation | TWA: 135 mg/m ³ | 130 mg/m ³ STEL: 50 | STEL: 270 mg/m ³ MAK: |
| | mg/m ³ STEL: 50 ppm | | _ | ppm STEL: 330 mg/m ³ | 20 ppm MAK: 133 |
| | Skin | | | Skin | mg/m ³ |

| Component | Switzerland | Poland | Norway | Ireland | Denmark |
|---------------------------|----------------------------------|------------------------------|--------------------------------|---------------------------------|---------------------------------|
| Ethylene glycol monobutyl | Skin STEL: 80 ppm | NDSCh: 300 mg/m ³ | TWA: 65 mg/m ³ TWA: | TWA: 20 ppm TWA: | TWA: 130 mg/m ³ TWA: |
| ether acetate | STEL: 540 mg/m ³ MAK: | NDS: 100 mg/m ³ | 10 ppm Skin | 133 mg/m ³ STEL: 50 | 20 ppm Skin |
| | 20 ppm MAK: 135 | - | | ppm STEL: 333 mg/m ³ | |
| | mg/m ³ | | | Skin | |

Occupational exposure controls

| Engineering Measures | Use only with adequate ventilation. Use ventilation adequate to keep exposures below recommended exposure limits. See MSDS. In case of insufficient ventilation, wear suitable respiratory equipment. |
|--------------------------------|---|
| Personal Protective Equipment | |
| Respiratory Protection | Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Respirator with a vapour filter. |
| Eye Protection | Ensure that eyewash stations and safety showers are close to the workstation location. Avoid contact with eyes. Safety glasses with side-shields. Goggles. Face-shield. |
| Skin Protection | Wear protective gloves/clothing. Solvent-resistant apron and boots. |
| Hand Protection | Nitrile rubber. Neoprene gloves. |
| General Hygiene Considerations | Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before eating, drinking, or smoking. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. |

Environmental exposure controls No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

| Appearance Odor pH Boiling point/Boiling Range Freezing Point/Range Evaporation Rate | Water-white Characteristic No information available >149°C / >300°F No information available No information available | Physical State Odor Threshold Autoignition Ter Melting Point/Ra Solubility Partition Coeffic octanol/water) | inge | Liquid No information available No information available No information available No information available No information available |
|---|--|---|--|--|
| Vapour Pressure Flammability (solid, gas) | No information available No information available | Vapour Density | | No information available |
| Flammability Limits in Air Upper No information availa Lower No information availa | | Flash Point Method Photochemicall | 64°C / 147° Setaflash cl / Reactive | |
| Weight Per Gallon (Ibs/gal) | 8.091 | Specific Gravity | | 0.97 |

10. STABILITY AND REACTIVITY

| Chemical Stability | Stable under normal conditions. |
|------------------------------------|---|
| Conditions to Avoid | Heat, flames and sparks. |
| Incompatible Products | Strong acids. Strong bases. Strong oxidizing agents. Reducing agents. |
| Hazardous Decomposition Products | Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO2). Carbon monoxide. |
| Possibility of Hazardous Reactions | None under normal processing. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------------------------|------------------|---------------------|---------------------|
| Ethylene glycol monobutyl ether | 1600 mg/kg (Rat) | 1480 mg/kg (Rabbit) | |
| acetate | | | |
| Gamma Butyrolactone | 1540 mg/kg (Rat) | | 2.68 mg/L (Rat) 4 h |

Chronic Toxicity No information available

| Sensitisation | No information available |
|-----------------------|--------------------------|
| Neurological Effects | No information available |
| Mutagenic Effects | No information available |
| Reproductive Effects | No information available |
| Developmental Effects | No information available |
| Teratogenicity | No information available |
| Chronic Effects | No information available |
| Target Organ Effects | No information available |

12. ECOLOGICAL INFORMATION

Ecotoxicity

We have no quantitative data concerning the ecological effects of this product. Environmental fate information is derived from consideration of the properties of the ingredients. Should not be released into the environment.

| Component | Freshwater Algae | Freshwater Fish | Water Flea |
|---------------------------------|-----------------------------------|------------------------------------|----------------------------------|
| Ethylene glycol monobutyl ether | 72 Hr EC50 Scenedesmus | | 48 Hr EC50 water flea: 37 mg/L |
| acetate | subspicatus: >500 mg/L | | - |
| Gamma Butyrolactone | 72 Hr EC50 Scenedesmus | 96 Hr LC50 Leuciscus idus: 220-460 | 48 Hr EC50 Daphnia magna Straus: |
| | subspicatus: 360 mg/L; 96 Hr EC50 | mg/L [static] | >500 mg/L |
| | Scenedesmus subspicatus: 79 mg/L | | - |

Persistence and Degradability Bioaccumulation Mobility in Environmental Media

No information available No information available No information available

| Component | log Pow |
|---|---------|
| Ethylene glycol monobutyl ether acetate | 1.51 |
| Gamma Butyrolactone | -0.566 |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Dispose of contents/container in accordance with local regulation.

Contaminated Packaging

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

14. TRANSPORT INFORMATION

RID

Not classified as dangerous in the meaning of transport regulations

ADR

Not classified as dangerous in the meaning of transport regulations

IMDG/IMO

Not classified as dangerous in the meaning of transport regulations

ICAO/IATA

Not classified as dangerous in the meaning of transport regulations

15. REGULATORY INFORMATION

The preparation is classified as dangerous in accordance with Directive 1999/45/EC

Labelling

Contains

Ethylene glycol monobutyl ether acetate

Symbol(s)

Xn - Harmful



R -phrase(s) R20/21 - Harmful by inhalation and in contact with skin

S -phrase(s)

S 2 - Keep out of the reach of children S46 - If swallowed, seek medical advice immediately and show this container or label

S36/37 - Wear suitable protective clothing and gloves

International Inventories

Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

REACH: Substances of Very High Concern (SVHC): Article 57 of Regulation (EC) No 1907/2006

Does NOT contain a listed substance

16. OTHER INFORMATION

Text of R phrases mentioned in Section 3 R36 - Irritating to eyes

R22 - Harmful if swallowed R20/21 - Harmful by inhalation and in contact with skin

| Revision Date | lov-19-2009 |
|---------------|-------------|
|---------------|-------------|

Revision Summary

New MSDS format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet