

SAFETY DATA SHEET

Regular maintenance kit Type S

IP5-324

OKI DATA INFOTECH CORPORATION

If swallowed: Get medical attention if irritation develops and persists.
 If swallowed, DO NOT induce vomiting.
 Get medical attention if symptoms occur.
 Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: Treat symptomatically and supportively

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Water spray
 Alcohol-resistant foam
 Dry chemical
 Carbon dioxide (CO2)

Unsuitable Extinguishing Media

None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting: Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.
 Use personal protective equipment.

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
 Use water spray to cool unopened containers.
 Remove undamaged containers from fire area if it is safe to do so.
 Evacuate area.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Follow safe handling advice and personal protective equipment recommendations.

6.2 Environmental precautions

Environmental precautions: Discharge into the environment must be avoided.
 Prevent further leakage or spillage if safe to do so.
 Prevent spreading over a wide area (e.g. by containment or oil barriers).
 Retain and dispose of contaminated wash water.
 Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Soak up with inert absorbent material.
 For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
 Clean up remaining materials from spill with suitable absorbent.
 Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
 Sections 13 and 15 of this SDS provide information regarding certain

local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Technical measures:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation:	Use only with adequate ventilation.
Advice on safe handling:	Handle in accordance with good industrial hygiene and safety practice. Take care to prevent spills, waste and minimize release to the environment.
Hygiene measures:	Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:	Keep in properly labelled containers. Store in accordance with the particular national regulations.
Advice on common storage:	Do not store with the following product types: Strong oxidizing agents

7.3 Specific end use(s)

Specific use(s):	No data available
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

2-(2-butoxyethoxy)ethyl acetate:	End Use: Workers
	Exposure routes: Inhalation
	Potential health effects: Long-term systemic effects
	Value: 85 mg/m ³
	End Use: Workers
	Exposure routes: Skin contact
	Potential health effects: Long-term systemic effects
	Value: 24 mg/kg
	End Use: Consumers
	Exposure routes: Inhalation
	Potential health effects: Long-term systemic effects
	Value: 43 mg/m ³
End Use: Consumers	
Exposure routes: Skin contact	
Potential health effects: Long-term systemic effects	
Value: 12 mg/kg	
End Use: Consumers	
Exposure routes: Ingestion	
Potential health effects: Long-term systemic effects	
Value: 1.58 mg/kg	

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

2-(2-butoxyethoxy)ethyl acetate:	Fresh water
	Value: 0.108 mg/l
	Marine water
	Value: 0.0108 mg/l
	Intermittent use/release

Value: 0.6 mg/l
 Fresh water sediment
 Value: 0.8 mg/kg
 Marine sediment
 Value: 0.8 mg/kg
 Soil
 Value: 0.29 mg/kg
 Oral
 Value: 70 mg/kg

8.2 Exposure controls

Engineering measures:	Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.
Personal protective equipment	
Eye protection:	Wear the following personal protective equipment: Safety glasses
Hand protection	
Remarks:	Wash hands before breaks and at the end of workday.
Skin and body protection:	Skin should be washed after contact.
Respiratory protection	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Filter type:	Organic vapour type (A)

9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Appearance:	liquid
Colour:	colourless
Odour	solvent-like
Odour Threshold:	No data available
pH:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	114°C Method: Cleveland open cup
Evaporation rate:	No data available
Flammability (solid, gas)	Not applicable
Upper explosion limit:	10.7 %(V)
Lower explosion limit:	0.7 %(V) (93 °C)
Vapour pressure:	No data available
Relative vapour density:	No data available
Density:	0.98-1.02g/cm ³
Water solubility:	65 g/l partly soluble
Partition coefficient: n-octanol/water:	Not applicable
Auto-ignition temperature:	No data available
Thermal decomposition:	No data available
Viscosity, dynamic:	No data available
Explosive properties:	Not explosive

Oxidizing properties: The substance is not classified as oxidizing.

9.2 Other information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions: Can react with strong oxidizing agents.

10.4 Conditions to avoid

Conditions to avoid: None known.

10.5 Incompatible materials

Materials to avoid: Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure: Inhalation, Skin contact, Ingestion, Eye contact

Acute toxicity: Not classified based on available information.

Skin corrosion/irritation: Not classified based on available information.

Serious eye damage/eye irritation: Not classified based on available information.

Respiratory or skin sensitization: Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

Germ cell mutagenicity: Not classified based on available information.

Carcinogenicity: Not classified based on available information.

Reproductive toxicity: Not classified based on available information.

STOT - single exposure: Not classified based on available information.

STOT - repeated exposure: Not classified based on available information.

Aspiration toxicity: Not classified based on available information.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Not relevant

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Product:	Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
Contaminated packaging:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION**14.1 UN number**

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

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

Not applicable for product as supplied.

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals:	Not applicable
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REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59):	Not applicable
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Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:	Not applicable
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Regulation (EC) No 850/2004 on persistent organic pollutants:	Not applicable
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Seveso II - Directive 2003/105/EC amending Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances:	Not applicable
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15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION**Further information**Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

< Wiper cleaning liquid >

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

<Regulation (EC) No. 1272/2008>

Classification

Serious eye damage, Category 1	H318: Causes serious eye damage.
Reproductive toxicity, Category 1B	H360Df: May damage the unborn child. Suspected of damaging fertility.

<1999/45/EC >

Toxic to Reproduction Category 1	R61: May cause harm to the unborn child.
Irritant	R41: Risk of serious damage to eyes.
Toxic to Reproduction Category 3	R62: Possible risk of impaired fertility.

2.2 Label elements

<Regulation (EC) No. 1272/2008>

Hazard pictograms



Signal word:

Danger

Hazard statements

H318 Causes serious eye damage.
H360Df May damage the unborn child. Suspected of damaging fertility.

Precautionary statements

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Hazardous components which must be listed on the label:

bis(2-(2-methoxyethoxy)ethyl) ether
γ-butyrolactone

2.3 Other hazards

Vapours may form explosive mixture with air.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Main Ingredients	Content (%)	CAS-No.	EC-No.	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)
bis(2-(2-methoxyethoxy)ethyl) ether	40-50	143-24-8	205-594-7	Repr.Cat.2; R61 Repr.Cat.3; R62	Repr. 1B; H360Df
γ -butyrolactone	1-5	96-48-0	202-509-5	Xn; R22 Xi; R41 R67	Acute Tox. 4; H302 Eye Dam. 1; H318 STOT SE 3; H336

Other components (listed on EINECS, NLP or ELINCS) are not hazardous according to the directives mentioned above.

4. FIRST-AID MEASURES

4.1 Description of first aid measures

General advice:	In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.
Protection of first-aiders:	If first aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists.
If inhaled:	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
In case of skin contact:	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Thoroughly clean shoes before reuse.
In case of eye contact:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention immediately
If swallowed:	If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel. Get medical attention. Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

Risks:	Causes serious eye damage. May damage the unborn child. Suspected of damaging fertility.
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4.3 Indication of any immediate medical attention and special treatment needed

Treatment:	Treat symptomatically and supportively
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5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:	Water spray Alcohol-resistant foam Dry chemical Carbon dioxide (CO ₂)
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Unsuitable Extinguishing Media

High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting: Do not use a solid water stream as it may scatter and spread fire.
Flash back possible over considerable distance.
Vapours may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Cool containers/tanks with water spray.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Remove all sources of ignition.
Use personal protective equipment.
Follow safe handling advice and personal protective equipment recommendations.

6.2 Environmental precautions

Environmental precautions: Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Non-sparking tools should be used.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Suppress (knock down) gases/vapours/mists with a water spray jet.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Technical measures:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation:	Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation.
Advice on safe handling:	Do not get on skin or clothing. Do not breathe vapours or spray mist. Do not swallow. Do not get in eyes. Handle in accordance with good industrial hygiene and safety practice. Keep container tightly closed. Keep away from heat and sources of ignition. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment.
Hygiene measures:	Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:	Keep in properly labelled containers. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.
Advice on common storage:	Do not store with the following product types: Strong oxidizing agents Explosives Gases

7.3 Specific end use(s)

Specific use(s):	No data available
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters**

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

γ-butyrolactone:	End Use: Workers
	Exposure routes: Inhalation
	Potential health effects: Long-term systemic effects
	Value: 130 mg/m ³
	End Use: Workers
	Exposure routes: Inhalation
	Potential health effects: Acute systemic effects
	Value: 958 mg/m ³
	End Use: Workers
	Exposure routes: Skin contact
	Potential health effects: Long-term systemic effects
	Value: 19 mg/kg
End Use: Consumers	
Exposure routes: Inhalation	
Potential health effects: Long-term systemic effects	
Value: 28 mg/m ³	
End Use: Consumers	
Exposure routes: Inhalation	
Potential health effects: Acute systemic effects	
Value: 340 mg/m ³	
End Use: Consumers	

Exposure routes: Skin contact
 Potential health effects: Long-term systemic effects
 Value: 8 mg/kg
 End Use: Consumers
 Exposure routes: Ingestion
 Potential health effects: Long-term systemic effects
 Value: 8 mg/kg

bis(2-(2-methoxyethoxy)ethyl) ether

End Use: Workers
 Exposure routes: Inhalation
 Potential health effects: Long-term systemic effects
 Value: 22 mg/m³
 End Use: Workers
 Exposure routes: Skin contact
 Potential health effects: Long-term systemic effects
 Value: 3 mg/kg bw/day
 End Use: Consumers
 Exposure routes: Inhalation
 Potential health effects: Long-term systemic effects
 Value: 0.5 mg/m³
 End Use: Consumers
 Exposure routes: Skin contact
 Potential health effects: Long-term systemic effects
 Value: 0.001 mg/kg bw/day
 End Use: Consumers
 Exposure routes: Ingestion
 Potential health effects: Long-term systemic effects
 Value: 0.001 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

γ-butyrolactone:

Fresh water
 Value: 0.056 mg/l
 Marine water
 Value: 0.0056 mg/l
 Intermittent use/release
 Value: 0.56 mg/l
 Sewage treatment plant
 Value: 452 mg/l
 Fresh water sediment
 Value: 0.24 mg/kg
 Marine sediment
 Value: 0.02 mg/kg
 Soil
 Value: 0.0147 mg/kg

bis(2-(2-methoxyethoxy)ethyl) ether

Fresh water
 Value: 32 mg/l
 Marine water
 Value: 3.2 mg/l
 Intermittent use/release
 Value: 50 mg/l
 Sewage treatment plant
 Value: 500 mg/l
 Fresh water sediment
 Value: 127 mg/kg
 Marine sediment
 Value: 12.7 mg/kg
 Soil
 Value: 6.7 mg/kg
 Oral
 Value: 8.32 mg/kg

8.2 Exposure controls

Engineering measures:	Minimize workplace exposure concentrations. Use only in an area equipped with explosion proof exhaust ventilation. Use with local exhaust ventilation
Personal protective equipment	
Eye protection:	Wear the following personal protective equipment: Chemical resistant goggles must be worn. If splashes are likely to occur, wear Face-shield
Hand protection	
Material:	Impervious gloves Flame retardant gloves
Remarks:	Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
Skin and body protection:	Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Wear the following personal protective equipment: Flame retardant antistatic protective clothing. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
Respiratory protection	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Filter type:	Organic vapour type (A)

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	liquid
Colour:	colorless
Odour	solvent-like
Odour Threshold:	No data available
pH:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point:	71 °C Method: Seta closed cup
Evaporation rate:	No data available
Flammability (solid, gas)	Not applicable
Upper explosion limit:	No data available
Lower explosion limit:	No data available
Vapour pressure:	No data available
Relative vapour density:	No data available
Density:	1.00 - 1.02 g/cm ³

Water solubility:	soluble
Solubility in other solvents	insoluble
Partition coefficient: n-octanol/water:	Not applicable
Auto-ignition temperature:	No data available
Thermal decomposition:	No data available
Viscosity, dynamic:	No data available
Explosive properties:	Not explosive
Oxidizing properties:	The substance or mixture is not classified as oxidizing.

9.2 Other information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions: Combustible liquid.
Vapours may form explosive mixture with air.
Can react with strong oxidizing agents.

10.4 Conditions to avoid

Conditions to avoid: Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid: Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure: Inhalation, Skin contact, Ingestion, Eye contact

Acute toxicity: Not classified based on available information.

< bis(2-(2-methoxyethoxy)ethyl)ether >

Acute oral toxicity: LD50 (Rat): 3,850 mg/kg

Acute dermal toxicity: LD50 (Rat): > 6,900 mg/kg

Remarks: Based on data from similar materials

<γ-butyrolactone>

Acute oral toxicity: LD50 (Rat): 1,582 mg/kg

Acute dermal toxicity: LC50 (Rat): > 5.1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Skin corrosion/irritation: Causes skin irritation.

< bis(2-(2-methoxyethoxy)ethyl)ether >

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

<γ-butyrolactone>

Species: Rabbit
Result: No skin irritation

Serious eye damage/eye irritation: Causes serious eye damage.

< bis(2-(2-methoxyethoxy)ethyl)ether >

Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation

<γ-butyrolactone>

Species: Rabbit
Method: OECD Test Guideline 405
Result: Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitization: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

< bis(2-(2-methoxyethoxy)ethyl)ether >

Test Type: Local lymph node assay (LLNA)
Exposure routes: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: negative
Remarks: Based on data from similar materials

<γ-butyrolactone>

Test Type: Local lymph node assay (LLNA)
Exposure routes: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: negative

Germ cell mutagenicity Not classified based on available information.

< bis(2-(2-methoxyethoxy)ethyl)ether >

Genotoxicity in vitro Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

<γ-butyrolactone>

Genotoxicity in vitro Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Carcinogenicity Not classified based on available information.

<γ-butyrolactone>

Species: Rat
Application Route: Ingestion
Exposure time: 103 weeks
Result: negative

Reproductive toxicity Not classified based on available information.

< bis(2-(2-methoxyethoxy)ethyl)ether >

Effects on fertility Test Type: Reproduction/Developmental toxicity screening test

	Species: Rat Application Route: Ingestion Method: OECD Test Guideline 421 Result: positive
Effects on foetal development	Test Type: Embryo-foetal development Species: Rabbit Application Route: Ingestion Method: OECD Test Guideline 414 Result: positive
Reproductive toxicity - Assessmen	Clear evidence of adverse effects on development, based on animal experiments., Some evidence of adverse effects on sexual function and fertility, based on animal experiments.
<γ-butyrolactone> Effects on fertility	Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test Species: Rat Application Route: Ingestion Method: OECD Test Guideline 422 Result: negative Remarks: Based on data from similar materials
Effects on foetal development	Test Type: Embryo-foetal development Species: Rat Application Route: Ingestion Result: negative
STOT - single exposure: <γ-butyrolactone> Assessment:	Not classified based on available information. May cause drowsiness or dizziness.
STOT - repeated exposure:	Not classified based on available information.
Repeated dose toxicity < bis(2-(2-methoxyethoxy)ethyl)ether >	
Species:	Rat
NOAEL:	250 mg/kg
Application Route:	inhalation
Exposure time:	28 d
Method:	OECD Test Guideline 407
Remarks:	Based on data from similar materials
<γ-butyrolactone>	
Species:	Rat
NOAEL:	225 mg/kg
Application Route:	Ingestion
Exposure time:	13 w
Aspiration toxicity:	Not classified based on available information.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

< bis(2-(2-methoxyethoxy)ethyl)ether >

Toxicity to fish: LC50 (Danio rerio (zebra fish)): > 5,000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates:	EC50 (Daphnia magna (Water flea)): 7,467 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	EC50 (Pseudokirchneriella subcapitata (green algae)): 2,814 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (green algae)): 625mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to bacteria:	EC10 : >= 5,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chron-ic toxicity):	NOEC: 320 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211
<γ-butyrolactone>	
Toxicity to fish:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 56 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	EC50 (Daphnia magna (Water flea)): > 500 mg/l Exposure time: 48 h
Toxicity to algae:	EC50 (Desmodesmus subspicatus (green algae)): > 500 mg/l Exposure time: 72 h NOEC (Desmodesmus subspicatus (green algae)): 31.25 mg/l Exposure time: 72 h
Toxicity to bacteria:	IC50 : 4,518 mg/l Exposure time: 40 h

12.2 Persistence and degradability

< bis(2-(2-methoxyethoxy)ethyl)ether >

Biodegradability:	Result: Inherently biodegradable. Biodegradation: > 70 % Exposure time: 28 d Method: OECD Test Guideline 302B Remarks: Based on data from similar materials
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<γ-butyrolactone>

Biodegradability:	Result: Readily biodegradable. Biodegradation: 77 % Exposure time: 14 d Method: OECD Test Guideline 301C
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12.3 Bioaccumulative potential

< bis(2-(2-methoxyethoxy)ethyl)ether >

Partition coefficient: n-octanol/water: log Pow: -0.84

<γ-butyrolactone>

Partition coefficient: n-octanol/water: log Pow: -0.566

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Not relevant

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

- Product: Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
- Contaminated packaging: Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

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

Not applicable for product as supplied.

15. REGULATORY INFORMATION

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).: Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants: Not applicable

Seveso II - Directive 2003/105/EC amending Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances: Not applicable

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

Full text of R-Phrases

R22:Harmful if swallowed.

R41:Risk of serious damage to eyes.
R61:May cause harm to the unborn child.
R62:Possible risk of impaired fertility.
R67:Vapours may cause drowsiness and dizziness.

Full text of H-Statements

H302: Harmful if swallowed.
H318: Causes serious eye damage.
H336:May cause drowsiness or dizziness.
H360Df:May damage the unborn child. Suspected of damaging fertili-ty.

Full text of other abbreviations

Acute Tox. : Acute toxicity.
Eye Dam. : Serious eye damage.
Repr. Reproductive toxicity
STOT SE: Specific target organ toxicity - single exposure.

Further information

Sources of key data used to compile the Safety Data Sheet:

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-cy, <http://echa.europa.eu/>

The information provided in this Safety Data Sheet is correct to the best of our knowledge, infor-mation and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Ma-terial users should review the information and recommendations in the specific context of their in-tended manner of handling, use, processing and storage, including an assessment of the appro-priateness of the SDS material in the user's end product, if applicable.