

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE COMPANY**

**1.1. Product identifier**

Trade name **optiprint clean**  
 Substance name: 2-(2-butoxyethoxy)ethanol  
 INDEX No.: 603-096-00-8  
 CAS No.: 112-34-5  
 EC No.: 203-961-6  
 Registration number: 01-2119475104-44-xxxx

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

**Application of the substance/preparation:**

Identified applications: See table in annex for a complete overview of identified applications.

**1.3. Details of the supplier of the safety data sheet**

**Name of manufacturer/supplier:** dentona AG  
**Street/P.O. Box:** Otto-Hahn-str. 27  
**Country code/Post code/City:** D-44227 Dortmund, Germany  
**Telephone:** +49 231 5556 0  
**Fax:** +49 231 5556 30  
**Email:** sdb@dentona.de

**1.4. Emergency telephone number:** Weekdays from 8am – 5pm: +49 231 5556-0

**SECTION 2: HAZARDS IDENTIFICATION**

**2.1. Classification of the substance or mixture**

REGULATION (EC) No. 1272/2008			
Hazard class	Hazard category	Target organ	H code
Serious eye damage/irritation	Category 2		H 319

The full text of the hazard statements listed in this section can be found in Section 16.

**Classification (67/548/EEC or Directive 1999/45/EC)**

Directive 67/548/EEC or 1999/45/EC	
Hazard symbol/Hazard class	R phrases
Irritating (Xi)	R36

The full text of the R (risk) phrases mentioned here can be found in Section 16.

**Important adverse effects:**

Human health:

Eye contact may cause the following effects:  
Causes serious eye irritation.

Physical and chemical hazards:

Stable under normal conditions

Possible effects on the environment:

Based on the available data, the product is not hazardous to the environment.

## 2.2. Label elements

### Labelling (GHS)

Hazard pictogram(s):



Signal word: Warning

H code	Hazard statements
H 319	Causes serious eye irritation

P code	Safety Instructions
P 280	Wear protective gloves/protective clothing/eye protection.
P264	Wash hands thoroughly after use.
P305 + P351 + P338	IN THE EVENT OF CONTACT WITH THE EYES: Rinse cautiously with water for several minutes. Remove any contact lenses worn if possible. Continue rinsing.
P337 + P313	If eye irritation persists: Seek medical advice/attention.

Hazardous component(s) to be listed on the labelling:

- 2-(2-butoxyethoxy)ethanol

## 2.3. Other hazards

The results of the PBT and vPvB evaluation can be found in subsection 12.5.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

Hazardous ingredients	Quantity %	Classification (Regulation (EC) No: 1272/2008) Hazard class/Hazard statements/Risk category		Classification (67/548/EEC)
2-(2-butoxyethoxy)ethanol				
INDEX No.: 603-096-00-8		Eye Irrit.2	Eye Irrit.2	Eye Irrit.2
CAS No.: 112-34-5				
EC No.: 203-961-6	<= 100			
Registration: 01-2119475104-44-xxxx				

The full text of the R (risk) phrases mentioned here can be found in Section 16. The full text of the hazard statements listed in this section can be found in Section 16.

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

**General:** Immediately remove all soiled and contaminated clothing.

**After inhalation:** Remove casualty to fresh air. In case of irregular breathing or respiratory arrest, initiate artificial respiration. If unconscious, place casualty in recovery position and seek medical advice.

**After skin contact:** Wash immediately with soap and plenty of water.

**If swallowed:** Rinse mouth with water and drink plenty of water. Never feed an unconscious person. DO NOT induce vomiting. Consult a doctor immediately.

**After eye contact:** Rinse eyes, also below the eyelids, immediately with plenty of water for at least 5 minutes. Consult an ophthalmologist immediately. If possible, go to an eye clinic.

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

For more information on symptoms and health hazards, see section 11.

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

Symptomatic treatment.

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## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

**Suitable extinguishing media:**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable extinguishing media:**

Water jet

### 5.2. Special hazards arising from the substance or mixture

Irritant smoke is produced during combustion. Explosive vapour-air mixtures can form at temperatures above the flash point.

### 5.3. Advice for firefighters

**Special protective equipment for firefighters**

In the event of a fire, wear self-contained breathing apparatus. Wear personal protective equipment.

**Further information:**

Cool closed containers in the vicinity of the source of the fire with water spray. Collect contaminated fire-fighting water separately. It must not get into the sewage system.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protective equipment. Provide adequate ventilation. Keep away from sources of heat and ignition. Avoid contact with skin and eyes. Do not inhale vapours and spray mist. For personal protective equipment, see section 8.

**6.2. Environmental precautions**

Do not allow entry into surface water or drains.

**6.3. Methods and material for containment and cleaning up**

Contain the spilled material, absorb with non-combustible, absorbent material (e.g. sand, earth, diatomaceous earth, vermiculite) and store in a container for disposal in accordance with local/national regulations (see Section 13). For disposal, place in appropriate and sealed containers.

**Additional Information:**

Dispose of the absorbed material according to Section Disposal.

**6.4. Reference to other sections**

For personal protective equipment, see section 8.  
Refer to Section 1 for emergency information.  
Refer to Section 8 for information on personal protective equipment.  
Refer to Section 13 for waste disposal.

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**SECTION 7: HANDLING AND STORAGE**

**7.1. Precautions for safe storage**

**Information on safe handling:**

Keep container tightly closed. Provide adequate ventilation. Use personal protective equipment: Avoid contact with skin and eyes. Emergency eye showers should be available in the immediate vicinity.

**Sanitary measures:**

Do not bring in food, beverages, or feed. Do not eat, drink or smoke in the area of application. Wash hands before breaks and at the end of the working day. Immediately remove all soiled and contaminated clothing. Avoid contact with skin and eyes. Do not inhale vapours and spray mist.

**7.2. Conditions for safe storage, including any incompatibilities**

**Requirements for storage rooms and containers.**

Store in a place with solvent-proof floor. Keep only in original container.

**Precautions for preventing fire and explosion:**

flammable liquids; at temperatures above the flash point, explosive vapour-air mixtures may form.

**Storage instructions:**

Do not bring in food, beverages, or feed. Incompatible with oxidising agents.

**Storage class (LGK):**

10 – Flammable liquids

**7.3. Specific end-uses:**

Identified applications: See table in annex for a complete overview of identified applications.

**SECTION 8: EXPOSURE CONTROLS/  
PERSONAL PROTECTION**

**8.1. Control parameters**

Ingredients. 2-(2-butoxyethoxy)ethanol	CAS-No.: 112-34-5
Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)	
DNEL Employees, local effects, inhalation Short-term exposure	:14 ppm
DNEL Employees, systemic effects, skin contact Long-term exposure	: 20 mg/kg KG/Ta
DNEL Employees, systemic effects, inhalation Long-term exposure	: 10 ppm
DNEL Employees, local effects, inhalation Long-term exposure	: 10 ppm
DNEL People, local effects, inhalation Short-term exposure	: 7.5 mg/m <sup>3</sup>
DNEL People, systemic effects, skin contact Long-term exposure	: 10 mg/kg KG/Ta
DNEL People, systemic effects, inhalation Long-term exposure	: 5 mg/kg KG/Ta
DNEL People, systemic effects, swallowing Long-term exposure	: 1.3 mg/kg KG/Tag
DNEL People, local effects, inhalation Long-term exposure	: 5 mg/m <sup>3</sup>
Predicted No-Effect Concentration (PNEC)	
Freshwater	: 1 mg/l
Seawater	: 0.1 mg/l
Freshwater sediment	: 4 mg/l
Marine sediment	: 0.4 mg/l
Wastewater treatment plant (STP)	: 200 mg/l
Ground	: 0.4 mg/l

Predicted No-Effect Concentration (PNEC)
EU ELV, Time-Weighted Average (TWA): 10 ppm, 67.5 mg/m <sup>3</sup> Indicative
EU ELV, Short-Term Exposure Limit (STEL): 15 ppm, 101.2 mg/m <sup>3</sup> Indicative
TRGS 900, MAC: 10 ppm, 67 mg/m <sup>3</sup> , (1.5) A risk of fruit damage need not be feared if the MAC and the biological limit are observed (see Section 2.7).

## 8.2. Exposure controls

### General protection and hygiene measures:

Avoid contact with skin and eyes. Do not inhale fumes. Do not eat, drink or smoke while working

### Personal protective equipment:

#### Respiratory protection:

Required if limits are exceeded. If ventilation is inadequate, wear breathing apparatus. Breathing apparatus with filter. Recommended filter type: A

#### Hand protection:

The glove material has to be impermeable and resistant to the product/substance/preparation. Observe the manufacturer's specifications with regard to permeability and breakthrough time as well as the special conditions at the workplace (mechanical stress, contact duration). Replace safety gloves at the first signs of wear. The following materials are suitable:

Material: Butyl rubber penetration time:  $\geq$  8 h glove thickness: 0.5 mm

Material: Fluorocarbon rubber penetration time:  $\geq$  8 h glove thickness: 0.4 mm

#### Eye protection:

Tight-fitting protective eyewear

#### Body protection:

Solvent-resistant protective clothing

#### Environmental exposure controls:

Do not allow entry into surface water or drains.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

#### General information

Shape:	Liquid
Colour:	colourless
Odour:	characteristic

**Important health, safety and environmental information**

Parameters	Value
Relative vapour density	5.58
Vapour pressure	0.027 hPa (20°C) 0.06 hPa (30 °C) 0.33 hPa (50 °C)
Relative density	Currently we do not have any information from our suppliers.
Density	0.95 g/cm <sup>3</sup> (20°C)
Self-ignition temperature	Approx. 208°C
Flash point	About 109°C (lidded crucible; method: ISO 2719)
Odour threshold	Currently we do not have any information from our suppliers.
Corrosion	N/A
Explosive properties	EU legislation: Non-explosive
Oxidising properties	N/A
pH value	neutral
Melting point/Melting range	-68°C
Initial boiling point	224–234°C (1013 hPa)
Evaporation rate	Currently we do not have any information from our suppliers.
Partition coefficient n-octanol/water	Currently we do not have any information from our suppliers.
Viscosity	5.85 hPa (20°C)
Solubility in water	Fully miscible
Decomposition temperature	Currently we do not have any information from our suppliers.
Self-accelerating decomposition temperature	Currently we do not have any information from our suppliers.

**9.2. Miscellaneous Information**

Molecular weight: 162.23 g/mol

**SECTION 10: STABILITY AND REACTIVITY****10.1. Reactivity**

Stable under specified storage conditions.

**10.2. Chemical stability**

Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

May form explosive peroxides. Incompatible with oxidising agents.

**10.4. Conditions to avoid**Heat, flames and sparks.  
Extremes of temperature and direct sunlight.**10.5. Incompatible materials**

Strong acids and strong bases, oxidising agents, metals, peroxide

**10.6. Hazardous decomposition products**

None known.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**11.1. Information on toxicological effects**

<b>Ingredients. 2-(2-butoxyethoxy)ethanol</b>		<b>CAS No. 112-34-5</b>
<b>Acute toxicity</b>		
<b>Oral</b>		
LD50	:	> 2000 mg/kg (rat) Swallowing leads to vomiting, stomach pain and symptoms similar to those caused by inhalation.
<b>Inhalation</b>		
		Fumes can cause irritation, headaches, dizziness and other disorders of the central nervous system.
<b>Skin</b>		
LD50	:	> 2000 mg/kg (rabbit)
<b>Irritation</b>		
<b>Skin</b>		
Result	:	No data available
<b>Eyes</b>		
Result	:	Causes serious eye irritation.
<b>Sensitisation</b>		
Result	:	No data available
<b>CMR effects</b>		
<b>CMR properties</b>		
Carcinogenicity	:	No data available
Mutagenicity	:	No data available
Teratogenicity	:	No data available
Reproductive toxicity	:	No data available
<b>Specific target organ toxicity</b>		
<b>Single exposure</b>		
Remarks	:	No data available
<b>Repeat effect</b>		
Remarks	:	No data available
<b>Other toxicologic properties</b>		
<b>Aspiration hazard</b>		
		No classification with regard to aspiration toxicity
<b>Further information</b>		



Revised on: 01/04/2018  
Effective from: 01/04/2018

Other notes on toxicity : Continued skin contact may cause defatting of skin and dermatitis.

Experiences with human exposure : Chronic exposure damages the brain and the central nervous system.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

Ingredients. 2-(2-butoxyethoxy)ethanol		CAS No. 112-34-5
Acute toxicity		
Fish		
LC50	: > 100 mg/l (Leuciscus idus (golden orfe))	
Toxicity to daphnia and other aquatic invertebrates		
EC50	: > 100 mg/l (Daphnia magna; 48 h)	
Algae		
EC50	: > 100 mg/l (Desmodesmus subspicatus (green algae))	

### 12.2. Persistence and degradability

Ingredients. 2-(2-butoxyethoxy)ethanol		CAS No. 112-34-5
Persistence and degradability		
Persistence		
Result	: > 100 mg/l (Leuciscus idus (golden orfe))	
Biodegradability		
Result	: 100% (aerobic activated sludge; 500 mg/l; exposure duration: 28 d)(OECD 302 B) Biodegradable	
Result	: > 70% (aerobic activated sludge; 10 mg/l; exposure duration: 28 d)(OECD 301 E) Slightly biodegradable.	

Ingredients. 2-(2-butoxyethoxy)ethanol		CAS No. 112-34-5
Persistence and degradability		
Biodegradability		
Result	: 76% (exposure duration: 28 d)(OECD 301 D) Slightly biodegradable.	
Result	: 90-100% (exposure duration: 8 d)(OECD 302 B) Slightly biodegradable.	
Result	: 90-100% (exposure duration: 14 d)(OECD 301 E) Slightly biodegradable.	

### 12.3. Bioaccumulative potential

Ingredients. 2-(2-butoxyethoxy)ethanol		CAS No. 112-34-5
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**Bioaccumulation**

Result : No data available

**12.4. Mobility in soil****Ingredients. 2-(2-butoxyethoxy)ethanol****CAS No. 112-34-5****Mobility**

Water : The product is mobile in aqueous environment.

**12.5. Results of PBT and vPvB assessment****Ingredients. 2-(2-butoxyethoxy)ethanol****CAS No. 112-34-5****Results of PBT and vPvB assessment**

Result : This substance is not persistent, bioaccumulative or toxic (PBT)., this substance is neither highly persistent nor highly bioaccumulative (vPvB).

**12.6. Other adverse effects****Ingredients. 2-(2-butoxyethoxy)ethanol****CAS No. 112-34-5****Other ecological information**Result : Do not allow entry into surface water or drains.  
Avoid penetration into the soil.**SECTION 13: DISPOSAL INFORMATION****13.1. Waste treatment methods****13.1.1 Product**

Disposal together with normal waste is not permitted. Special disposal according to local legal regulations is required. Do not allow to enter drains. Contact the waste disposal company.

**13.1.2 Packaging**

Contaminated packaging should be emptied as far as possible and after appropriate cleansing, may be taken for recycling. Packaging that cannot be cleaned should be disposed of in the same way as the substance itself.

**13.1.3 Waste code (EC)**

No waste code according to the European Waste Catalogue (AVV) can be assigned for this product, as the intended use dictates the assignment.

The waste code number must be determined in consultation with the local waste disposal company.

**SECTION 14: TRANSPORT INFORMATION****14.1. UN No.:**

not applicable

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**14.2 Correct UN shipping name:**

not applicable

**14.3 Transport hazard class:**

not applicable

**14.4 Packing group**

not applicable

**14.5. Environmental hazards**

Environmental hazard labelling:  No  Yes

Marine Pollutant (IMDG): :  No  Yes

**14.6. Special precautions for users:**

N/A

**14.7. Bulk transportation in accordance with the MARPOL Convention and the IBC Code**

IMDG: not applicable

**SECTION 15: REGULATORY INFORMATION**

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

WHC (DE) : 2-(2-butoxyethoxy)ethanol: WHC code number 46; WHC: 1; slightly hazardous to water, classified according to the German VwVwS regulation, Annex 2

Hazardous Incident (Reporting) Ordinance : Not subject to StörfallV. –

Other regulations : Employment restriction: Employment restrictions for protection against hazardous substances in accordance with the Maternity Protection Directive and the Youth Employment Protection Act must be observed.

**2-(2-butoxyethoxy)ethanol**

EU. REACH, Annex XVII, Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles Registration No. 55

EU. REACH, Annex XVII, Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles EC Number: 203-961-6

EU. REACH, Annex XVII, Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles Registration No. 5

EU. REACH, Annex XVII, Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles EC Number: 203-961-6

**Registration status**

**2-(2-butoxyethoxy)ethanol:**

Legal list

Registration

Registration number

AICS	YES	
DSL	YES	
INV (CN)	YES	
ENCS (JP)	YES	(2)-422
ENCS (JP)	YES	(7)-97
JEX (JP)	YES	(2)-422
ISHL (JP)	YES	(2)-422
ISHL (JP)	YES	(7)-97
ISHL (JP)	YES	2-(8)-99
ISHL (JP)	YES	2-(8)-317
TSCA	YES	
EINECS	YES	203-961-6
KECI (KR)	YES	KE-10466
PICCS (PH)	YES	
IECSC	YES	

**15.2. Chemical safety assessment**

No chemical safety assessment in accordance with Regulation (EC) 1907/2006 (REACH) was conducted for this product.

**SECTION 16: OTHER INFORMATION**

**Full text of the R-phrases listed in Sections 2 and 3.**

R36 Irritating to the eyes.

**Full text of the hazard statements in Sections 2 and 3.**

H319 Causes serious eye irritation.

**Additional information**

Important references and data sources: For the preparation of this safety data sheet, information from our suppliers as well as data from the "Database of Registered Substances" of the European Chemicals Agency (ECHA) were used.

**Miscellaneous Information**

The information in this safety data sheet is based on the status of our knowledge at the time of revision and is used to describe our products with regard to safety precautions to be taken. It does not represent an assurance of the properties of the product described or any product information/specification and does not constitute a legally binding relationship. The details in the safety data sheet are not transferable to other products. If the product mentioned in this safety data sheet is blended, mixed or processed with other materials, or subjected to any processing, the information provided in this safety data sheet should not be transferred to the new material, unless otherwise expressly

**Safety Data Sheet in accordance with Regulation (EC) No 1907/2006**

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- End of safety data sheet -

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