

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 1/26

## REDOCOL Graining Pen (various colours)

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

#### 1.1. Product identifier

Trade name/designation:

REDOCOL Graining Pen (various colours)

Article No.:

PI73000

UFI:

MD5H-466C-J00Q-GKDS

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

Use of the substance/mixture:

Restoration Kit

Relevant identified uses:

**Sector of uses [SU]**

**SU 6a:** Manufacture of wood and wood products

**Product Categories [PC]**

**PC 9:** Coatings and paints, fillers, putties, thinners

**Article categories [AC]**

**AC 11:** Wood articles: furniture

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

distributor:

**Ostermann UK Ltd**

Stonebridge Cross Business Park

Unit 104 Pointon Way

WR9 0LW Droitwich

United Kingdom

**Telephone:** UK +44 (0) 1905 793 550, Ireland +44 (0) 1905 793 552

**Telefax:** +44 (0) 1905 793 559

**E-mail:** UK sales.uk@ostermann.eu, Ireland sales.ie@ostermann.eu

**Website:** www.ostermann.eu

**E-mail (competent person):** j.bruns@ostermann.eu

#### 1.4. Emergency telephone number

UK: Mr. J. Bruns +44 1905 793 550

IR: Mr. J. Bruns +44 1905 793 552, 24h: +49 30 - 30 68 67 00 (National Poison Inform. Centre Berlin) , UK +44 1905 793 550/ IR +44 (0)1905 793 552 (Only available during office hours.)

### SECTION 2: Hazards identification

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

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
flammable liquids ( <i>Flam. Liq. 3</i> )	H226: Flammable liquid and vapour.	
Skin corrosion/irritation ( <i>Skin Irrit. 2</i> )	H315: Causes skin irritation.	
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	
STOT-single exposure ( <i>STOT SE 3</i> )	H336: May cause drowsiness or dizziness.	
Germ cell mutagenicity ( <i>Muta. 1B</i> )	H340: May cause genetic defects.	
Carcinogenicity ( <i>Carc. 1B</i> )	H350: May cause cancer.	

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 2/26

## REDOCOL Graining Pen (various colours)

Hazard classes and hazard categories	Hazard statements	Classification procedure
STOT-repeated exposure (STOT RE 2)	H373: May cause damage to organs through prolonged or repeated exposure. (central nervous system)	

### 2.2. Label elements

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

##### Hazard pictograms:



**GHS02**  
Flame



**GHS05**  
Corrosion



**GHS07**  
Exclamation mark



**GHS08**  
Health hazard

Signal word: Danger

Hazard statements for physical hazards	
H226	Flammable liquid and vapour.

Hazard statements for health hazards	
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure. (central nervous system)

Supplemental hazard information	
EUH208	Contains Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-), Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-), Reaction mass of Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)]chromate(1-) (1:1) and Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-4-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)]chromate(1-). May produce an allergic reaction.

Precautionary statements Prevention	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/Personal protection.

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

Precautionary statements Storage	
P403 + P235	Store in a well-ventilated place. Keep cool.

Precautionary statements Disposal	
P501	Dispose of contents/container to Disposal methods.

#### Special rules for supplemental label elements for certain mixtures:

25,3 % percent of the mixture consists of ingredient(s) of unknown acute toxicity (dermal).

26,3 % percent of the mixture consists of ingredient(s) of unknown acute toxicity (inhalative).

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 3/26

## REDOCOL Graining Pen (various colours)

### 2.3. Other hazards

No data available

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Description:

Mixture of following listed substances with nonhazardous additions.

#### Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 71-36-3 EC No.: 200-751-6 Index No.: 603-004-00-6 REACH No.: 01-2119484630-38	<b>butan-1-ol</b> Acute Tox. 4 (H302), Eye Dam. 1 (H318), Flam. Liq. 3 (H226), STOT SE 3 (H335, H336), Skin Irrit. 2 (H315) Danger	18 - < 35 weight-%
CAS No.: 107-98-2 EC No.: 203-539-1 Index No.: 603-064-00-3 REACH No.: 01-2119457435-35	<b>1-methoxypropan-2-ol</b> Flam. Liq. 3 (H226), STOT SE 3 (H336) Warning	15 - < 30 weight-%
CAS No.: 64-17-5 EC No.: 200-578-6 Index No.: 603-002-00-5	<b>ethanol</b> Flam. Liq. 2 (H225) Danger	14 - < 25 weight-%
EC No.: 927-241-2 Index No.: 649-330-00-2 REACH No.: 01-2119471843-32-0000	<b>Hydrocarbons, C9-C10, containing n-alkanes, isoalkanes, cyclics, with &lt;2% aromatics</b> Asp. Tox. 1 (H304), Carc. 1B (H350), Muta. 1B (H340), STOT RE 1 (H372) Danger	4 - < 8 weight-%
CAS No.: 108-65-6 EC No.: 203-603-9 Index No.: 607-195-00-7	<b>2-methoxy-1-methylethyl acetate</b> Flam. Liq. 3 (H226) Warning	0 - < 1 weight-%
CAS No.: 78-93-3 EC No.: 201-159-0 Index No.: 606-002-00-3	<b>butanone</b> Eye Irrit. 2 (H319), Flam. Liq. 2 (H225), STOT SE 3 (H336) Danger EUH066	0 - ≤ 0.767939 weight-%
CAS No.: 123-86-4 EC No.: 204-658-1 Index No.: 607-025-00-1 REACH No.: 01-2119485493-29-0007	<b>n-butyl acetate</b> Flam. Liq. 3 (H226), STOT SE 3 (H336) Warning EUH066	0 - ≤ 0.492283 weight-%
CAS No.: 1330-20-7 EC No.: 215-535-7 Index No.: 601-022-00-9 REACH No.: 01-2119488216-32	<b>xylene</b> Acute Tox. 4 (H332, H312), Flam. Liq. 3 (H226), Skin Irrit. 2 (H315) Warning	0 - < 0.18 weight-%
CAS No.: 85186-66-9	<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-4- nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> Repr. 1B (H360), STOT RE 2 (H373), Skin Sens. 1B (H317) Danger	0 - < 0.15 weight-%
CAS No.: 85186-67-0	<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2- hydroxy-5- nitrophenyl)azo]-2-naphthalenolato(2- )]chromate(1-)</b> Repr. 1B (H360), STOT RE 2 (H373), Skin Sens. 1B (H317) Danger	0 - < 0.15 weight-%

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 4/26

## REDOCOL Graining Pen (various colours)

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
EC No.: 943-145-3 REACH No.: 01-2120759947-32	<b>Reaction mass of Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-) (1:1) and Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-4-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-)</b> Aquatic Chronic 3 (H412), Skin Sens. 1B (H317) Warning	0 - < 0.13 weight-%
CAS No.: 78-83-1 EC No.: 201-148-0 Index No.: 603-108-00-1 REACH No.: 01-2119484609-23	<b>2-methylpropan-1-ol</b> Eye Dam. 1 (H318), Flam. Liq. 3 (H226), STOT SE 3 (H335, H336), Skin Irrit. 2 (H315) Danger	0 - < 0.08 weight-%
CAS No.: 100-41-4 EC No.: 202-849-4 Index No.: 601-023-00-4 REACH No.: 01-2119489370-35	<b>ethylbenzene</b> Acute Tox. 4 (H332), Asp. Tox. 1 (H304), Flam. Liq. 2 (H225), STOT RE 2 (H373) Danger	0 - < 0.08 weight-%
CAS No.: 111-76-2 EC No.: 203-905-0 Index No.: 603-014-00-0 REACH No.: 01-2119475108-36	<b>2-butoxyethanol</b> Acute Tox. 4 (H332, H302), Eye Irrit. 2 (H319), Skin Irrit. 2 (H315) Warning <b>Acute Toxicity Estimate</b> ATE (oral): 1,200 mg/kg	0 - < 0.03 weight-%
CAS No.: 70657-70-4 EC No.: 274-724-2 Index No.: 607-251-00-0	<b>2-methoxypropyl acetate</b> Flam. Liq. 3 (H226), Repr. 1B (H360D***), STOT SE 3 (H335) Danger	0 - < 0.01 weight-%

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

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended. Warning First aider: Pay attention to self-protection!

#### Following inhalation:

Provide fresh air. In case of respiratory tract irritation, consult a physician. Get medical advice/attention if you feel unwell.

#### In case of skin contact:

Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention. After contact with skin, wash immediately with plenty of water and soap.

#### After eye contact:

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

#### Following ingestion:

Rinse mouth.

Get medical advice/attention if you feel unwell. Let 1 glass of water be drunken in little sips (dilution effect).

#### Self-protection of the first aider:

Use personal protection equipment. No direct artificial respiration to be given by first aider.

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

Skin corrosion/irritation, Serious eye damage/eye irritation, Irritation to respiratory tract, Dizziness, Dizziness.

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

Treat symptomatically.

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 5/26

## REDOCOL Graining Pen (various colours)

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

**Suitable extinguishing media:**

Water spray jet, alcohol resistant foam, Extinguishing powder, Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media:**

Full water jet.

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

Highly flammable, Combustible.

**Hazardous combustion products:**

In case of fire: Gases/vapours, toxic.

In case of fire may be liberated: Carbon dioxide, Carbon monoxide, Pyrolysis products, toxic, carbon black.

#### 5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

#### 5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

**Personal precautions:**

Remove persons to safety.

**Protective equipment:**

Wear protective gloves/protective clothing/eye protection/face protection.

##### 6.1.2. For emergency responders

**Personal protection equipment:**

Personal protection equipment: see section 8.

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains. Avoid release to the environment.

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

**For containment:**

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

Soak up inert absorbent and dispose as waste requiring special attention.

**For cleaning up:**

Water (with cleaning agent). Clean with detergents. Avoid solvent cleaners.

#### 6.4. Reference to other sections

Safe handling: see section 7.

Personal protection equipment: see section 8.

Disposal: see section 13.

#### 6.5. Additional information

Use appropriate container to avoid environmental contamination.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Protective measures**

**Advices on safe handling:**

Wear personal protection equipment (refer to section 8). Do not breathe gas/vapour/aerosol. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Fire prevent measures:**

Take precautionary measures against static discharge. Keep away from sources of ignition - No smoking.

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 6/26

## REDOCOL Graining Pen (various colours)

### Environmental precautions:

Discharge into the environment must be avoided.

### Advices on general occupational hygiene

Wash hands before breaks and after work. After cleaning apply high-fat content skin care cream.  
When using do not eat, drink, smoke, sniff. Avoid contact with skin, eyes and clothes.

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

#### Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place.

#### Packaging materials:

Keep/Store only in original container.

#### Requirements for storage rooms and vessels:

Soils have to conform to the "Guidelines for avoidance of ignition hazards due to electrostatic charges (TRGS 727)".

#### Hints on storage assembly:

Keep away from combustible material. Do not store together with:

Combustible substances of acute toxicity, category 1 and 2 / very toxic substances

Non-combustible substances of acute toxicity, category 1 and 2 / very toxic substances

Combustible substances of acute toxicity, category 3 / hazardous substances that are toxic or produce chronic effects

Non-combustible substances of acute toxicity, category 3 / hazardous substances that are toxic or produce chronic effects

**Storage class (TRGS 510, Germany):** 3 – Flammable liquids

#### Further information on storage conditions:

Store in a well-ventilated place. Keep cool.

### 7.3. Specific end use(s)

#### Recommendation:

Observe technical data sheet.

#### Industrial sector specific solutions:

Solvent-based varnishes/wood glazes, low in aromatics

#### GISCODE:

M-KH03

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
IE from 17 Jan 2020	<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	① 20 ppm
WEL (GB) from 17 Jan 2020	<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	② 50 ppm (154 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)
IE from 4 May 2010	<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	① 100 ppm (375 mg/m <sup>3</sup> ) ② 150 ppm (568 mg/m <sup>3</sup> ) ⑤ IOELV
IOELV (EU)	<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	① 100 ppm (375 mg/m <sup>3</sup> ) ② 150 ppm (568 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 7/26

## REDOCOL Graining Pen (various colours)

Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
WEL (GB)	<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	① 100 ppm (375 mg/m <sup>3</sup> ) ② 150 ppm (560 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)
IE from 5 Dec 2011	<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	② 1,000 ppm
WEL (GB)	<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	① 1,000 ppm (1,920 mg/m <sup>3</sup> )
IE	<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	① 50 ppm (275 mg/m <sup>3</sup> ) ② 100 ppm (550 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin) SK, IOELV
IOELV (EU)	<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	① 50 ppm (275 mg/m <sup>3</sup> ) ② 100 ppm (550 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)
WEL (GB)	<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	① 50 ppm (274 mg/m <sup>3</sup> ) ② 100 ppm (548 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)
IE	<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	① 200 ppm (600 mg/m <sup>3</sup> ) ② 300 ppm (900 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin) Sk, IOELV
IOELV (EU)	<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	① 200 ppm (600 mg/m <sup>3</sup> ) ② 300 ppm (900 mg/m <sup>3</sup> )
WEL (GB)	<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	① 200 ppm (600 mg/m <sup>3</sup> ) ② 300 ppm (899 mg/m <sup>3</sup> )
IE from 18 May 2021	<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	① 50 ppm (241 mg/m <sup>3</sup> ) ② 150 ppm (723 mg/m <sup>3</sup> ) ⑤ IOELV
IOELV (EU) from 20 Nov 2019	<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	① 50 ppm (241 mg/m <sup>3</sup> ) ② 150 ppm (723 mg/m <sup>3</sup> )
IE	<b>xylene</b> CAS No.: 1330-20-7 EC No.: 215-535-7	① 50 ppm (221 mg/m <sup>3</sup> ) ② 100 ppm (442 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin) Sk, IOELV
IOELV (EU)	<b>xylene</b> CAS No.: 1330-20-7 EC No.: 215-535-7	① 50 ppm (221 mg/m <sup>3</sup> ) ② 100 ppm (442 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)
WEL (GB)	<b>xylene</b> CAS No.: 1330-20-7 EC No.: 215-535-7	① 50 ppm (220 mg/m <sup>3</sup> ) ② 100 ppm (441 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)
IE	<b>2-methylpropan-1-ol</b> CAS No.: 78-83-1 EC No.: 201-148-0	① 50 ppm (150 mg/m <sup>3</sup> ) ② 75 ppm (225 mg/m <sup>3</sup> )
WEL (GB)	<b>2-methylpropan-1-ol</b> CAS No.: 78-83-1 EC No.: 201-148-0	① 50 ppm (154 mg/m <sup>3</sup> ) ② 75 ppm (231 mg/m <sup>3</sup> )

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 8/26

## REDOCOL Graining Pen (various colours)

Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
IE from 4 May 2010	<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	① 100 ppm (442 mg/m <sup>3</sup> ) ② 200 ppm (884 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin) Sk, IOELV
IOELV (EU)	<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	① 100 ppm (442 mg/m <sup>3</sup> ) ② 200 ppm (884 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)
WEL (GB)	<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	① 100 ppm (441 mg/m <sup>3</sup> ) ② 125 ppm (552 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)
WEL (GB) from 17 Jan 2020	<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	① 25 ppm (123 mg/m <sup>3</sup> ) ② 50 ppm (246 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)
IE	<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m <sup>3</sup> ) ② 50 ppm (246 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin) SK, IOELV
IOELV (EU)	<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	① 20 ppm (98 mg/m <sup>3</sup> ) ② 50 ppm (246 mg/m <sup>3</sup> ) ⑤ (may be absorbed through the skin)

### 8.1.2. Biological limit values

Limit value type (country of origin)	Substance name	Limit value	① Parameter ② Test material ③ Time of sampling: ④ Remark
BMGV (GB)	<b>xylene</b> CAS No.: 1330-20-7 EC No.: 215-535-7	650 mmol/mol creatinine	① methyl hippuric acid ② urine ③ end of exposure or end of shift
BMGV (GB)	<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	240 mmol/mol creatinine	① Butoxyacetic acid ② urine ③ end of exposure or end of shift

### 8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	55.357 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, systemic effects
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	310 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, local effects
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	155 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, local effects
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	3.125 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects



# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 9/26

## REDOCOL Graining Pen (various colours)

Substance name	DNEL value	① DNEL type ② Exposure route
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	1.562 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	369 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, systemic effects
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	43.9 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, systemic effects
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	553.5 mg/m <sup>3</sup>	① DNEL worker ② Acute - inhalation, systemic effects
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	553.5 mg/m <sup>3</sup>	① DNEL worker ② Acute - inhalation, local effects
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	183 mg/kg bw/ day	① DNEL worker ② Long-term - dermal, systemic effects
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	78 mg/kg bw/ day	① DNEL Consumer ② Long-term - dermal, systemic effects
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	33 mg/kg bw/ day	① DNEL Consumer ② Long-term - oral, systemic effects
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	950 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, systemic effects
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	114 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, systemic effects
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	1,900 mg/m <sup>3</sup>	① DNEL worker ② Acute - inhalation, local effects
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	950 mg/m <sup>3</sup>	① DNEL Consumer ② Acute - inhalation, local effects
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	343 mg/kg bw/ day	① DNEL worker ② Long-term - dermal, systemic effects
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	206 mg/kg bw/ day	① DNEL Consumer ② Long-term - dermal, systemic effects
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	87 mg/kg bw/ day	① DNEL worker ② Long-term - oral, systemic effects
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	87 mg/kg bw/ day	① DNEL worker ② Acute - oral, systemic effects
<b>Hydrocarbons, C9-C10, containing n-alkanes, isoalkanes, cyclics, with &lt;2% aromatics</b> EC No.: 927-241-2	185 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, systemic effects
<b>Hydrocarbons, C9-C10, containing n-alkanes, isoalkanes, cyclics, with &lt;2% aromatics</b> EC No.: 927-241-2	77 mg/kg bw/ day	① DNEL worker ② Long-term - dermal, systemic effects

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 10/26

## REDOCOL Graining Pen (various colours)

Substance name	DNEL value	① DNEL type ② Exposure route
<b>Hydrocarbons, C9-C10, containing n-alkanes, isoalkanes, cyclics, with &lt;2% aromatics</b> EC No.: 927-241-2	46 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
<b>Hydrocarbons, C9-C10, containing n-alkanes, isoalkanes, cyclics, with &lt;2% aromatics</b> EC No.: 927-241-2	300 mg/kg bw/day	① DNEL worker ② Long-term - oral, systemic effects
<b>Hydrocarbons, C9-C10, containing n-alkanes, isoalkanes, cyclics, with &lt;2% aromatics</b> EC No.: 927-241-2	46 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	275 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, systemic effects
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	33 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, systemic effects
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	33 mg/m <sup>3</sup>	① DNEL Consumer ② Acute - inhalation, systemic effects
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	500 mg/m <sup>3</sup>	① DNEL worker ② Acute - inhalation, local effects
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	796 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	320 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	36 mg/kg bw/day	① DNEL worker ② Long-term - oral, systemic effects
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	600 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, systemic effects
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	106 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, systemic effects
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	1,161 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	412 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	31 mg/kg bw/day	① DNEL worker ② Long-term - oral, systemic effects
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	48 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, systemic effects
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	102.34 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, systemic effects
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	859.7 mg/m <sup>3</sup>	① DNEL Consumer ② Acute - inhalation, systemic effects

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 11/26

## REDOCOL Graining Pen (various colours)

Substance name	DNEL value	① DNEL type ② Exposure route
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	480 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, local effects
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	600 mg/m <sup>3</sup>	① DNEL worker ② Acute - inhalation, local effects
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	7 mg/kg bw/ day	① DNEL worker ② Long-term - dermal, systemic effects
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	11 mg/kg bw/ day	① DNEL worker ② Acute - dermal, systemic effects
<b>2-methylpropan-1-ol</b> CAS No.: 78-83-1 EC No.: 201-148-0	310 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, local effects
<b>2-methylpropan-1-ol</b> CAS No.: 78-83-1 EC No.: 201-148-0	55 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, local effects
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	77 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, systemic effects
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	15 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, systemic effects
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	293 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, local effects
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	180 mg/kg bw/ day	① DNEL worker ② Long-term - dermal, systemic effects
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	1.6 mg/kg bw/ day	① DNEL Consumer ② Long-term - oral, systemic effects
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	58.8 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, systemic effects
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	17.4 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, systemic effects
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	17.4 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, local effects
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	41.7 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	25 mg/kg bw/ day	① DNEL Consumer ② Long-term - dermal, systemic effects
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	4.2 mg/kg bw/ day	① DNEL worker ② Long-term - oral, systemic effects
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	98 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, systemic effects
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	59 mg/m <sup>3</sup>	① DNEL Consumer ② Long-term - inhalation, systemic effects

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 12/26

## REDOCOL Graining Pen (various colours)

Substance name	DNEL value	① DNEL type ② Exposure route
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	1,091 mg/m <sup>3</sup>	① DNEL worker ② Acute - inhalation, systemic effects
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	426 mg/m <sup>3</sup>	① DNEL Consumer ② Acute - inhalation, systemic effects
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	246 mg/m <sup>3</sup>	① DNEL worker ② Acute - inhalation, local effects
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	147 mg/m <sup>3</sup>	① DNEL Consumer ② Acute - inhalation, local effects
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	6.3 mg/kg bw/day	① DNEL worker ② Long-term - oral, systemic effects
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	26.7 mg/kg bw/day	① DNEL worker ② Acute - oral, systemic effects
<b>copper(2+) hydrogen 3-[(2-ethylhexyl)oxy]propan-1-amine 14,24,32-tris[3-[(2-ethylhexyl)oxy]propyl]amino]oxy]sulf octaazanonacyclo[28.6.1.1<sup>3,10</sup>.1<sup>12,19</sup>.1<sup>21,28</sup>]nonadecaene-37,39-diide-5-sulfonate</b> CAS No.: 94277-77-7 EC No.: 304-661-9	10 mg/m <sup>3</sup>	① DNEL worker ② Long-term - inhalation, local effects

Substance name	PNEC Value	① PNEC type
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	82 µg/L	① PNEC aquatic, freshwater
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	8.2 µg/L	① PNEC aquatic, marine water
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	0.0324 mg/kg	① PNEC aquatic, marine water
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	2.476 mg/L	① PNEC sewage treatment plant
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	0.324 mg/kg	① PNEC sediment, freshwater
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	0.0166 mg/kg	① PNEC soil
<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6	2.25 mg/L	① PNEC aquatic, intermittent release
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	10 mg/L	① PNEC aquatic, freshwater
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	1 mg/L	① PNEC aquatic, marine water
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	100 mg/L	① PNEC sewage treatment plant

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 13/26

## REDOCOL Graining Pen (various colours)

Substance name	PNEC Value	① PNEC type
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	52.3 mg/kg	① PNEC sediment, freshwater
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	5.2 mg/kg	① PNEC sediment, marine water
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	4.59 mg/kg	① PNEC soil
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1	100 mg/L	① PNEC aquatic, intermittent release
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	0.96 mg/L	① PNEC aquatic, freshwater
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	0.76 mg/L	① PNEC aquatic, marine water
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	580 mg/L	① PNEC sewage treatment plant
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	3.6 mg/kg	① PNEC sediment, freshwater
<b>ethanol</b> CAS No.: 64-17-5 EC No.: 200-578-6	0.63 mg/kg	① PNEC soil, freshwater
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	635 µg/L	① PNEC aquatic, marine water
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	63.5 µg/L	① PNEC aquatic, marine water
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	100 mg/L	① PNEC sewage treatment plant
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	3.29 mg/kg	① PNEC sediment, freshwater
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	0.329 mg/kg	① PNEC sediment, marine water
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	0.29 mg/kg	① PNEC soil
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9	6.35 mg/L	① PNEC aquatic, intermittent release
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	55.8 mg/L	① PNEC aquatic, freshwater
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	55.8 mg/L	① PNEC aquatic, marine water
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	709 mg/L	① PNEC sewage treatment plant
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	284.74 mg/kg	① PNEC sediment, freshwater

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 14/26

## REDOCOL Graining Pen (various colours)

Substance name	PNEC Value	① PNEC type
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	284.7 mg/kg	① PNEC sediment, marine water
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	1 g/kg	① PNEC secondary poisoning
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	55.8 mg/L	① PNEC aquatic, intermittent release
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0	22.5 mg/kg	① PNEC soil, freshwater
<b>Fatty acids, C18, unsatd., dimers, reaction products with N,N-dimethyl-1,3-propanediamine and 1,3-propanediamine</b> CAS No.: 162627-17-0 EC No.: 605-296-0	5.8 mg/kg bw/day	① PNEC soil
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	0.18 mg/L	① PNEC aquatic, freshwater
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	0.018 mg/L	① PNEC aquatic, marine water
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	35.6 mg/L	① PNEC sewage treatment plant
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	0.981 mg/L	① PNEC sediment, freshwater
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	0.0981 mg/L	① PNEC sediment, marine water
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	0.36 mg/L	① PNEC aquatic, intermittent release
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1	0.0903 mg/L	① PNEC soil, freshwater
<b>Amines, C10-C14-branched and linear alkyl, [1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphthalenolato(2-)] [1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-64-7	0.5 mg/m <sup>3</sup>	① PNEC air
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-66-9	0.5 mg/m <sup>3</sup>	① PNEC air
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-67-0	0.5 mg/m <sup>3</sup>	① PNEC air
<b>2-methylpropan-1-ol</b> CAS No.: 78-83-1 EC No.: 201-148-0	400 µg/L	① PNEC aquatic, freshwater

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 15/26

## REDOCOL Graining Pen (various colours)

Substance name	PNEC Value	① PNEC type
<b>2-methylpropan-1-ol</b> CAS No.: 78-83-1 EC No.: 201-148-0	40 µg/L	① PNEC aquatic, marine water
<b>2-methylpropan-1-ol</b> CAS No.: 78-83-1 EC No.: 201-148-0	10 mg/L	① PNEC sewage treatment plant
<b>2-methylpropan-1-ol</b> CAS No.: 78-83-1 EC No.: 201-148-0	1.56 mg/kg bw/day	① PNEC sediment, freshwater
<b>2-methylpropan-1-ol</b> CAS No.: 78-83-1 EC No.: 201-148-0	156 mg/kg bw/ day	① PNEC sediment, marine water
<b>2-methylpropan-1-ol</b> CAS No.: 78-83-1 EC No.: 201-148-0	11 mg/L	① PNEC aquatic, intermittent release
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	100 µg/L	① PNEC aquatic, freshwater
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	100 µg/L	① PNEC aquatic, marine water
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	9.6 mg/L	① PNEC sewage treatment plant
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	13.7 mg/kg	① PNEC sediment, freshwater
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4	13.7 mg/kg	① PNEC sediment, marine water
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	50 µg/L	① PNEC aquatic, freshwater
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	5 µg/L	① PNEC aquatic, marine water
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	232 mg/L	① PNEC sewage treatment plant
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	0.203 mg/kg	① PNEC sediment, freshwater
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	0.0203 mg/kg	① PNEC sediment, marine water
<b>butyl glycolate</b> CAS No.: 7397-62-8 EC No.: 230-991-7	500 µg/L	① PNEC aquatic, intermittent release
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	8.8 mg/L	① PNEC aquatic, freshwater
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	880 µg/L	① PNEC aquatic, marine water
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	463 mg/L	① PNEC sewage treatment plant
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	34.6 mg/kg	① PNEC sediment, freshwater

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 16/26

## REDOCOL Graining Pen (various colours)

Substance name	PNEC Value	① PNEC type
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	3.46 mg/kg	① PNEC sediment, marine water
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	2.33 mg/kg	① PNEC soil
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	20 mg/kg	① PNEC secondary poisoning
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0	26.4 mg/L	① PNEC aquatic, intermittent release

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

#### 8.2.2. Personal protection equipment



##### Eye/face protection:

Eye glasses with side protection EN 166.

##### Skin protection:

Tested protective gloves must be worn EN ISO 374.

Suitable material: NBR (Nitrile rubber), Thickness of the glove material >0,7 mm, Breakthrough time: >480 min.

In the case of wanting to use the gloves again, clean them before taking off and air them well. Breakthrough times and swelling properties of the material must be taken into consideration.

In normal use (no skin contact): No gloves required.

##### Thermal hazards:

Risk of explosion if heated under confinement.

##### Other protection measures:

Wear suitable protective clothing. When using do not eat, drink or smoke.

#### 8.2.3. Environmental exposure controls

No data available

## SECTION 9: Physical and chemical properties

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

#### Appearance

**Physical state:** Liquid

**Colour:** various

**Odour:** characteristic

#### Safety relevant basis data

Parameter	Value	at °C	① Method ② Remark
pH	7	20 °C	
Melting point	<i>not determined</i>		
Freezing point	<i>not determined</i>		
Initial boiling point and boiling range	<i>not determined</i>		
Decomposition temperature	<i>not determined</i>		
Flash point	23 °C		
Evaporation rate	<i>not determined</i>		



# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 17/26

## REDOCOL Graining Pen (various colours)

Parameter	Value	at °C	① Method ② Remark
Auto-ignition temperature	<i>not determined</i>		
Upper/lower flammability or explosive limits	<i>not determined</i>		
Vapour pressure	<i>not determined</i>		
Vapour density	<i>not determined</i>		
Density	<i>not determined</i>		
Relative density	<i>not determined</i>		
Bulk density	<i>not determined</i>		
Water solubility	partially miscible		
Partition coefficient: n-octanol/water	<i>not determined</i>		
Dynamic viscosity	<i>not determined</i>		
Kinematic viscosity	<i>not determined</i>		

### 9.2. Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Flammable liquid and vapour.

### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

### 10.3. Possibility of hazardous reactions

No data available

### 10.4. Conditions to avoid

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

### 10.5. Incompatible materials

Oxidising agent, strong.

### 10.6. Hazardous decomposition products

Gases/vapours, toxic. In case of fire may be liberated: Flammable solvent vapor mixtures are possible.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6
<b>LD<sub>50</sub> oral:</b> 790 mg/kg (Rat) South African Medical Journal. Vol. 43, Pg. 795, 1969.
<b>LD<sub>50</sub> dermal:</b> 3,400 mg/kg (Rabbit) Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 10, 1974.
<b>LC<sub>50</sub> Acute inhalation toxicity (vapour):</b> 24.3 mg/L 4 h (Rat) Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 10, 1974.
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1
<b>LD<sub>50</sub> oral:</b> 3,739 - 4,277 mg/kg (Rat)
<b>LD<sub>50</sub> dermal:</b> 2,000 mg/kg (Rat)
<b>Hydrocarbons, C9-C10, containing n-alkanes, isoalkanes, cyclics, with &lt;2% aromatics</b> EC No.: 927-241-2
<b>LD<sub>50</sub> oral:</b> >15,000 mg/kg (Rat) MSDS Distributor
<b>LD<sub>50</sub> dermal:</b> >5,000 mg/kg (Rabbit) MSDS Distributor
<b>LC<sub>50</sub> Acute inhalation toxicity (dust/mist):</b> >6.1 mg/L 4 h (Rat) MSDS Distributor
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9
<b>LD<sub>50</sub> oral:</b> 8,530 mg/kg (Ratte) Dow Chemical Company Reports. Vol. MSD-1582
<b>LD<sub>50</sub> dermal:</b> >5,000 mg/kg (Kaninchen) Dow Chemical Company Reports. Vol. MSD-1582

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 18/26

## REDOCOL Graining Pen (various colours)

<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0
<b>LD<sub>50</sub> oral:</b> 2,740 mg/kg (Rat) Toxicology and Applied Pharmacology. Vol. 19, Pg. 699, 1971.
<b>LD<sub>50</sub> dermal:</b> 6,480 mg/kg (Rabbit) Shell Chemical Company. Vol. MSDS-5390-4,
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1
<b>LD<sub>50</sub> oral:</b> 10,760 mg/kg (Ratte) OECD Prüfrichtlinie 423
<b>LD<sub>50</sub> dermal:</b> >14,112 mg/kg (Rabbit) OECD Prüfrichtlinie 402
<b>LC<sub>50</sub> Acute inhalation toxicity (dust/mist):</b> 23.4 mg/L 4 h (Rat) OECD Prüfrichtlinie 403
<b>xylene</b> CAS No.: 1330-20-7 EC No.: 215-535-7
<b>LD<sub>50</sub> oral:</b> 4,300 mg/kg (Rat) AMA Archives of Industrial Health. Vol. 14, Pg. 387, 1956.
<b>LD<sub>50</sub> dermal:</b> >1,700 mg/kg (Rabbit) Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 123, 1974.
<b>LC<sub>50</sub> Acute inhalation toxicity (dust/mist):</b> 21.7 mg/L 4 h (Rat) Raw Material Data Handbook, Vol.1: Organic Solvents, 1974. Vol. 1, Pg. 123, 1974.
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-66-9
<b>LD<sub>50</sub> oral:</b> >10,000 mg/kg (Rat)
<b>LD<sub>50</sub> dermal:</b> >2,000 mg/kg (Rat)
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-67-0
<b>LD<sub>50</sub> oral:</b> >10,000 mg/kg (Rat)
<b>LD<sub>50</sub> dermal:</b> >2,000 mg/kg (Rat)
<b>Reaction mass of Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-) (1:1) and Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-4-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-)</b> EC No.: 943-145-3
<b>LD<sub>50</sub> oral:</b> 10,000 mg/kg (Rat)
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4
<b>LD<sub>50</sub> oral:</b> 3,500 mg/kg (Rat)
<b>LD<sub>50</sub> dermal:</b> 17.8 mg/kg (Rabbit)
<b>LC<sub>50</sub> Acute inhalation toxicity (dust/mist):</b> 3,500 mg/L (Rat)
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0
<b>ATE (oral)<sup>1</sup>:</b> 1,200 mg/kg
<b>LD<sub>50</sub> oral:</b> 470 mg/kg (Rat) GESTIS
<b>LD<sub>50</sub> dermal:</b> 220 mg/kg (Rabbit) GESTIS
<b>LC<sub>50</sub> Acute inhalation toxicity (dust/mist):</b> 2.17 mg/L 4 h (Rat) GESTIS

<sup>1</sup>: Acute Toxicity Estimate. Harmonised (legal) classification.

### Acute oral toxicity:

Based on available data, the classification criteria are not met.

### Acute dermal toxicity:

Based on available data, the classification criteria are not met.

### Acute inhalation toxicity:

Based on available data, the classification criteria are not met.

### Skin corrosion/irritation:

Causes skin irritation.

### Serious eye damage/irritation:

Causes serious eye damage.

### Respiratory or skin sensitisation:

Contains Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-), Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-), Reaction mass of Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-) (1:1) and Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-4-

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 19/26

## REDOCOL Graining Pen (various colours)

nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-). May produce an allergic reaction.

### Germ cell mutagenicity:

May cause genetic defects.

### Carcinogenicity:

May cause cancer.

### Reproductive toxicity:

Based on available data, the classification criteria are not met.

### STOT-single exposure:

May cause respiratory irritation. May cause drowsiness or dizziness.

### STOT-repeated exposure:

May cause damage to organs through prolonged or repeated exposure.

### Aspiration hazard:

Based on available data, the classification criteria are not met.

### Additional information:

No data available

### 11.2. Information on other hazards

No data available

## SECTION 12: Ecological information

### 12.1. Toxicity

**butan-1-ol** CAS No.: 71-36-3 EC No.: 200-751-6

**LC<sub>50</sub>**: 100 - 2,300 mg/L 4 d (fish) Mattson, V.R., J.W. Arthur, and C.T. Walbridge 1976. Acute Toxicity of Selected Organic Compounds to Fathead Minnows. EPA-600/3-76-097, U.S.EPA, Duluth, MN :12 p.

**LC<sub>50</sub>**: 1,980 - 1,980 mg/L 2 d (crustaceans) Kuhn, R., M. Pattard, K.D. Pernak, and A. Winter 1989. Results of the Harmful Effects of Selected Water Pollutants (Anilines, Phenols, Aliphatic Compounds) to Daphnia magna. Water Res. 23(4):495-499

**1-methoxypropan-2-ol** CAS No.: 107-98-2 EC No.: 203-539-1

**LC<sub>50</sub>**: 1,000 - 20,800 mg/L 4 d (fish) ECHA

**LC<sub>50</sub>**: 21,100 - 25,900 mg/L 2 d (crustaceans) ECHA

**EC<sub>50</sub>**: 1,000 mg/L (Algae/water plant) ECHA

**NOEC**: 1,000 - 4,640 mg/L 4 d (fish) ECHA

**Hydrocarbons, C9-C10, containing n-alkanes, isoalkanes, cyclics, with <2% aromatics** EC No.: 927-241-2

**LC<sub>50</sub>**: 10 - ≤100 mg/L 2 d (crustaceans, Daphnia magna (Big water flea)) MSDS Distributor

**LC<sub>50</sub>**: 10 - ≤100 mg/L 4 d (fish, Oncorhynchus mykiss (Rainbow trout)) MSDS Distributor

**LC<sub>50</sub>**: >100 mg/L (Algae/water plant) MSDS Distributor

**LC<sub>50</sub>**: >1,000 mg/L (Mikroorganismen) MSDS Distributor

**LC<sub>50</sub>**: >10 - <30 mg/L 4 d (fish, Oncorhynchus mykiss (Rainbow trout))

**EC<sub>50</sub>**: >1,000 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata) EL 50 SDB BR

**EC<sub>50</sub>**: >22 - <46 mg/L 2 d (crustaceans, Daphnia magna (Big water flea)) EL 50 SDB BR

**NOEC**: <1 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata) NOELR SDB BR

**2-methoxy-1-methylethyl acetate** CAS No.: 108-65-6 EC No.: 203-603-9

**LC<sub>50</sub>**: 100 - 180 mg/L 4 d (fish)

**EC<sub>50</sub>**: 500 mg/L 2 d (crustaceans)

**NOEC**: 100 mg/L 4 d (fish)

**NOEC**: 63.5 mg/L 12 d (fish)

**NOEC**: 100 mg/L 21 d (crustaceans)

**NOEC**: 1,000 mg/L 4 d (Algae/water plant)

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 20/26

## REDOCOL Graining Pen (various colours)

<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0
<b>LC<sub>50</sub></b> : 3,220 - 3,220 mg/L 4 d (fish, Pimephales promelas) Brooke, L.T., D.J. Call, D.L. Geiger, and C.E. Northcott 1984 Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales promelas), Vol. 1. Center for Lake Superior Environmental Stud., Univ.of Wisconsin-Superior, Superior, WI :414
<b>EC<sub>50</sub></b> : 5,090 - 5,090 mg/L 2 d (crustaceans) Randall, T.L., and P.V. Knopp 1980. Detoxification of Specific Organic Substances by Wet Oxidation. J.Water Pollut.Control Fed. 52(8):2117-2130
<b>EC<sub>50</sub></b> : 2,029 mg/L 4 d (Algae/water plant) ECHA
<b>NOEC</b> : 68 mg/L 2 d (crustaceans) ECHA
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1
<b>LC<sub>50</sub></b> : 18 mg/L 4 d (fish, Pimephales promelas) OECD Prüfrichtlinie 203
<b>EC<sub>50</sub></b> : 32 - 44 mg/L 2 d (crustaceans, Daphnia magna)
<b>EC<sub>50</sub></b> : 246 - 647.7 mg/L 3 d (Algae/water plant, Desmodesmus subspicatus) Wachstumshemmung
<b>NOEC</b> : 105 - 196 mg/L 3 d (Algae/water plant, Desmodesmus subspicatus) Wachstumshemmung
<b>NOEC</b> : 23.2 mg/L 21 d (crustaceans)
<b>IC<sub>50</sub></b> : 356 mg/L 2 d (Tetrahymena)
<b>xylene</b> CAS No.: 1330-20-7 EC No.: 215-535-7
<b>LC<sub>50</sub></b> : 3.3 - 780 mg/L 4 d (fish) Bailey, H.C., D.H.W. Liu, and H.A. Javitz 1985. Time/Toxicity Relationships in Short-Term Static, Dynamic, and Plug-Flow Bioassays. In: R.C.Bahner and D.J.Hansen (Eds.), Aquatic Toxicology and Hazard Assessment, 8th Symposium, ASTM STP 891, Philadelphia, PA :193-212
<b>LC<sub>50</sub></b> : 8.5 - 8.5 mg/L 2 d (crustaceans)
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-66-9
<b>LC<sub>50</sub></b> : >100 mg/L 4 d (fish, Danio rerio (zebrafish))
<b>EC<sub>50</sub></b> : >100 mg/L 2 d (crustaceans, Daphnia magna (Big water flea))
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-67-0
<b>LC<sub>50</sub></b> : >100 mg/L 4 d (fish, Danio rerio (zebrafish))
<b>EC<sub>50</sub></b> : >100 mg/L 2 d (crustaceans, Daphnia magna (Big water flea))
<b>Reaction mass of Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-) (1:1) and Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-4-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-)</b> EC No.: 943-145-3
<b>EC<sub>50</sub></b> : 27.39 mg/L 2 d (crustaceans)
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4
<b>LC<sub>50</sub></b> : 4.2 - 5.1 mg/L 4 d (fish)
<b>NOEC</b> : 3.3 mg/L 4 d (fish)
<b>LC<sub>50</sub></b> : 2.6 mg/L 4 d (crustaceans)
<b>EC<sub>50</sub></b> : 1.8 - 2.4 mg/L 2 d (crustaceans)
<b>NOEC</b> : 0.96 mg/L 4 d (crustaceans)
<b>EC<sub>50</sub></b> : 3.6 - 7.7 mg/L 4 d (Algae/water plant)
<b>NOEC</b> : 3.4 - 4.5 mg/L 4 d (Algae/water plant)
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0
<b>LC<sub>50</sub></b> : 1,250 - 1,490 mg/L 4 d (fish) GESTIS
<b>EC<sub>50</sub></b> : 1,550 - 1,800 mg/L 2 d (crustaceans) ECHA
<b>EC<sub>50</sub></b> : 623 - 1,840 mg/L 3 d (Algae/water plant) ECHA

### 12.2. Persistence and degradability

<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6
<b>Biodegradation</b> : Yes, rapidly
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1
<b>Biodegradation</b> : Yes, rapidly

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 21/26

## REDOCOL Graining Pen (various colours)

<b>Hydrocarbons, C9-C10, containing n-alkanes, isoalkanes, cyclics, with &lt;2% aromatics</b> EC No.: 927-241-2
<b>Biodegradation:</b> Yes, rapidly
<b>Remark:</b> Bioakkumulation potentiell möglich, Schädlich für Fische.
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9
<b>Biodegradation:</b> Yes, rapidly
<b>Remark:</b> in Water
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0
<b>Biodegradation:</b> Yes, rapidly
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1
<b>Biodegradation:</b> Yes, rapidly
<b>Remark:</b> 83 % (aerob; Expositionsdauer: 28 d)(OECD Prüfrichtlinie 301D)
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-66-9
<b>Biodegradation:</b> Poorly biodegradable.
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-67-0
<b>Biodegradation:</b> Poorly biodegradable.
<b>Reaction mass of Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-) (1:1) and Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-4-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-)</b> EC No.: 943-145-3
<b>Biodegradation:</b> Poorly biodegradable.
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4
<b>Biodegradation:</b> Yes, slowly
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0
<b>Biodegradation:</b> Yes, rapidly

### 12.3. Bioaccumulative potential

<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6
<b>Log K<sub>OW</sub>:</b> 1
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1
<b>Log K<sub>OW</sub>:</b> 1
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0
<b>Log K<sub>OW</sub>:</b> 0.3
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1
<b>Log K<sub>OW</sub>:</b> 2.3
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-66-9
<b>Log K<sub>OW</sub>:</b> 3
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-67-0
<b>Log K<sub>OW</sub>:</b> 3
<b>Reaction mass of Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-) (1:1) and Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-4-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-)</b> EC No.: 943-145-3
<b>Log K<sub>OW</sub>:</b> 5
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4
<b>Log K<sub>OW</sub>:</b> 3.15
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0
<b>Log K<sub>OW</sub>:</b> 0.81

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 22/26

## REDOCOL Graining Pen (various colours)

### 12.4. Mobility in soil

No data available

### 12.5. Results of PBT and vPvB assessment

<b>butan-1-ol</b> CAS No.: 71-36-3 EC No.: 200-751-6
<b>Results of PBT and vPvB assessment:</b> —
<b>1-methoxypropan-2-ol</b> CAS No.: 107-98-2 EC No.: 203-539-1
<b>Results of PBT and vPvB assessment:</b> —
<b>Hydrocarbons, C9-C10, containing n-alkanes, isoalkanes, cyclics, with &lt;2% aromatics</b> EC No.: 927-241-2
<b>Results of PBT and vPvB assessment:</b> —
<b>2-methoxy-1-methylethyl acetate</b> CAS No.: 108-65-6 EC No.: 203-603-9
<b>Results of PBT and vPvB assessment:</b> —
<b>butanone</b> CAS No.: 78-93-3 EC No.: 201-159-0
<b>Results of PBT and vPvB assessment:</b> —
<b>n-butyl acetate</b> CAS No.: 123-86-4 EC No.: 204-658-1
<b>Results of PBT and vPvB assessment:</b> —
<b>xylene</b> CAS No.: 1330-20-7 EC No.: 215-535-7
<b>Results of PBT and vPvB assessment:</b> —
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-66-9
<b>Results of PBT and vPvB assessment:</b> This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
<b>Amines, C10-14-branched and linear alkyl, bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]chromate(1-)</b> CAS No.: 85186-67-0
<b>Results of PBT and vPvB assessment:</b> This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
<b>Reaction mass of Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-) (1:1) and Amines, C10-14-branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-4-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)] chromate(1-)</b> EC No.: 943-145-3
<b>Results of PBT and vPvB assessment:</b> —
<b>ethylbenzene</b> CAS No.: 100-41-4 EC No.: 202-849-4
<b>Results of PBT and vPvB assessment:</b> —
<b>2-butoxyethanol</b> CAS No.: 111-76-2 EC No.: 203-905-0
<b>Results of PBT and vPvB assessment:</b> This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

### 12.6. Endocrine disrupting properties

No data available

### 12.7. Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### 13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product

07 03 99	Wastes not otherwise specified
----------	--------------------------------

Directive 2008/98/EC (Waste Framework Directive)

HP 3	Flammable
------	-----------

Waste code packaging

15 01 06	mixed packaging
----------	-----------------

### Waste treatment options

Appropriate disposal / Product:

Consult the appropriate local waste disposal expert about waste disposal.

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 23/26

## REDOCOL Graining Pen (various colours)

### Appropriate disposal / Package:

Non-contaminated packages may be recycled.









### Other disposal recommendations:

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

### 13.2. Additional information

Return to Distributor..

## SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
<b>14.1. UN number or ID number</b>			
UN 1263	UN 1263	UN 1263	UN 1263
<b>14.2. UN proper shipping name</b>			
Paint (BUTANOLS )	Paint (BUTANOLS )	Paint (BUTANOLS )	Paint (BUTANOLS )
<b>14.3. Transport hazard class(es)</b>			
 3	 3	 3	 3
<b>14.4. Packing group</b>			
II	II	II	II
<b>14.5. Environmental hazards</b>			
		 MARINE POLLUTANT	
<b>14.6. Special precautions for user</b>			
<b>Special Provisions:</b> 650 <b>Limited quantity (LQ):</b> 5 L <b>Hazard identification number (Kemler No.):</b> 33 <b>Classification code:</b> F1 <b>Tunnel restriction code:</b> (D/E) <b>Remark:</b> -	<b>Special Provisions:</b> 650 <b>Limited quantity (LQ):</b> 5 L <b>Classification code:</b> F1 <b>Remark:</b> -	<b>Special Provisions:</b> 650 <b>Limited quantity (LQ):</b> 5 L <b>EmS-No.:</b> F-E, S-E	<b>Special Provisions:</b> 650 <b>Limited quantity (LQ):</b> 5 L

### 14.7. Maritime transport in bulk according to IMO instruments

not determined.

### Additional information:

-

## SECTION 15: Regulatory information

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

#### 15.1.1. EU legislation

##### Restrictions on use:

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 24/26

## REDOCOL Graining Pen (various colours)

### Other regulations (EU):

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive], Hazard categories:

- P5a Flammable Liquids, Category 1 or 2
- P5b Flammable liquids
- P5c Flammable liquids of Categories 2 or 3, not covered by P5a and P5b

### Directive 2004/42/EC on the limitation of emissions of volatile organic compounds:

Volatile organic compounds (VOC) content in percent by weight: 90.7 weight-%

### 15.1.2. National regulations

#### [GB] National regulations

#### Other regulations, restrictions and prohibition regulations

Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)

Regulation 850/2004/EC on persistent organic pollutants (POP)

Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)

### 15.2. Chemical Safety Assessment

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

## SECTION 16: Other information

### 16.1. Indication of changes

No data available

### 16.2. Abbreviations and acronyms

AC	Article Category
ACGIH	American Conference of Governmental Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ASTM	American Society for Testing and Materials
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
DIN	German Institute for Standardization / German Industrial Standard
DNEL	derived no-effect level
EC <sub>50</sub>	Effective Concentration 50%
ECHA	European Chemicals Agency
EN	European Standard
ES	Exposure scenario
EWC	European Waste Catalogue
IC <sub>50</sub>	Inhibition Concentration 50 %
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
KG	body weight
LC <sub>50</sub>	Lethal (fatal) Concentration 50%
LD <sub>50</sub>	Lethal (fatal) Dose 50%
MAK	Maximum concentration in the workplace air (CH)
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety & Health
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
OEL	Threshold Limit Value
OSHA	Occupational Safety & Health Administration
PBT	persistent and bioaccumulative and toxic
PC	Product category
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation and Authorization of Chemicals
RID	Dangerous goods regulations for transport by rail
STP	sewage treatment plant



# SAFETY DATA SHEET

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

Revision date: 10 Mar 2023

Print date: 11 Mar 2023

Version: 0.1



Page 25/26

## REDOCOL Graining Pen (various colours)

SU use category  
TRGS Technische Regeln für Gefahrstoffe  
UN United Nations  
VOC Volatile organic compounds  
ZNS central nervous system

For abbreviations and acronyms, see ECHA: Guidance on information requirements and chemical safety assessment, Chapter R.20 (list of terms and abbreviations).

### 16.3. Key literature references and sources for data

No data available

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
flammable liquids ( <i>Flam. Liq. 3</i> )	H226: Flammable liquid and vapour.	
Skin corrosion/irritation ( <i>Skin Irrit. 2</i> )	H315: Causes skin irritation.	
Serious eye damage/eye irritation ( <i>Eye Dam. 1</i> )	H318: Causes serious eye damage.	
STOT-single exposure ( <i>STOT SE 3</i> )	H335: May cause respiratory irritation.	
STOT-single exposure ( <i>STOT SE 3</i> )	H336: May cause drowsiness or dizziness.	
Germ cell mutagenicity ( <i>Muta. 1B</i> )	H340: May cause genetic defects.	
Carcinogenicity ( <i>Carc. 1B</i> )	H350: May cause cancer.	
STOT-repeated exposure ( <i>STOT RE 2</i> )	H373: May cause damage to organs through prolonged or repeated exposure. (central nervous system)	

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

Hazard statements	
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H360D	May damage the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Supplemental hazard information	
EUH066	Repeated exposure may cause skin dryness or cracking.

### 16.6. Training advice

No data available

# SAFETY DATA SHEET

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

**Revision date:** 10 Mar 2023

**Print date:** 11 Mar 2023

**Version:** 0.1



Page 26/26

## REDOCOL Graining Pen (various colours)

### 16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.