

## Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2014

Reviewed on 03/31/2014

### 1: Identification

- . **1.1 Product identifier**
- . **Trade name:** EUKOBROM
- . **Article number:** 100296, 100294
- . **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- . **Application of the substance / the mixture**  
Developer for photographic use  
Black and white developer for photographic use
- . **1.3 Details of the supplier of the safety data sheet**
- . **Manufacturer/Supplier:**  
TETENAL Europe GmbH  
Schützenwall 31-35  
D-22844 Norderstedt/Germany  
Phone: ++49 (0) 40 521 45-0, Fax: ++49 (0) 40 521 45-296  
www.tetenal.com; E-mail: info@tetenal.com
- . **Information department:** Department environment and safety. E-Mail: info@tetenal.com
- . **1.4 Emergency telephone number:**  
Poison Information Centre Berlin/Germany: +49 (0) 30 - 30686 790 (English 24hours)

### 2: Hazard(s) identification

- . **2.1 Classification of the substance or mixture**
- . **Classification according to Regulation (EC) No 1272/2008**  
Avoid contact with eyes, skin and clothing. Avoid mist. Keep container closed. Use eye protection, chemical-resistant gloves and skin protection. Wash thoroughly after handling.  
FIRST AID: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and immediately flush skin with soap and with plenty of water.  
Get medical attention if symptoms occur. If swallowed induce vomiting immediately as directed by medical personnel.

Muta. 2	H341	Suspected of causing genetic defects.
Carc. 2	H351	Suspected of causing cancer.
Eye Dam. 1	H318	Causes serious eye damage.
Aquatic Acute 1	H400	Very toxic to aquatic life.
Skin Irrit. 2	H315	Causes skin irritation.
Skin Sens. 1	H317	May cause an allergic skin reaction.

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- . **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Harmful  
Limited evidence of a carcinogenic effect. Possible risk of irreversible effects.  
Irritant  
May cause sensitisation by skin contact.  
Dangerous for the environment  
Very toxic to aquatic organisms.
- . **Information concerning particular hazards for human and environment:**  
The product has to be labeled due to the calculation procedure of international guidelines.
- . **Classification system:**  
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

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- . **2.2 Label elements**
- . **Labelling according to Regulation (EC) No 1272/2008**  
The product is classified and labeled according to the CLP regulation.

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**. Hazard pictograms**



**. Signal word** Danger

**. Hazard-determining components of labeling:**  
hydroquinone (1,4-dihydroxybenzene)

**. Hazard statements**

- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H317 May cause an allergic skin reaction.
- H341 Suspected of causing genetic defects.
- H351 Suspected of causing cancer.
- H400 Very toxic to aquatic life.

**. Precautionary statements**

- P101 If medical advice is needed, have product container or label at hand.
- P102 Keep out of reach of children.
- P103 Read label before use.
- P264 Wash thoroughly after handling.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**. Classification system:**

**. NFPA ratings (scale 0 - 4)**



**. HMIS-ratings (scale 0 - 4)**



**. 2.3 Other hazards**

**. Results of PBT and vPvB assessment**

- . **PBT:** Not applicable.
- . **vPvB:** Not applicable.

### 3: Composition/information on ingredients

**. 3.2 Chemical characterization: Mixtures**

. **Description:** Mixture of the substances listed below with nonhazardous additions.

**. Dangerous components:**

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CAS: 123-31-9 Index number: 604-005-00-4 RTECS: MX 3500000 Reg.nr.: 01-2119524016-51	hydroquinone (1,4-dihydroxybenzene)	3-5%
CAS: 584-08-7 RTECS: TS 7750000 Reg.nr.: 01-2119532646-36	potassium carbonate	1- <3%
CAS: 1330-43-4 Index number: 005-011-00-4 RTECS: VZ 2240000	disodium tetraborate, anhydrous	1- <3%
CAS: 1310-73-2 Index number: 011-002-00-6 Reg.nr.: 01-2119457892-27	sodium hydroxide (caustic soda)	1- <2%
CAS: 67-43-6 Reg.nr.: 01-2119497281-34	Diethylenetriamine pentaacetic acid (DTPA)/ N-carboxymethyliminobis(ethylenenitrilo)tetra(acetic acid)	1- <2%
CAS: 92-43-3 Index number: 606-022-00-2	1-phenyl-3-pyrazolidone (Phenidone A )	0.1- <1%

**. SVHC**

1330-43-4 disodium tetraborate, anhydrous

### 4: First-aid measures

**. 4.1 Description of first aid measures**

- . **General information:** Immediately remove any clothing soiled by the product.
- . **After inhalation:** Supply fresh air and to be sure call for a doctor.
- . **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- . **After eye contact:** Rinse opened eye for several minutes under running water.
- . **After swallowing:**  
Rinse out mouth and then drink plenty of water.  
If symptoms persist consult doctor.

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

No further relevant information available.

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

No further relevant information available.

### 5: Fire-fighting measures

**. 5.1 Extinguishing media**

**. Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**. 5.2 Special hazards arising from the substance or mixture** No further relevant information available.

**. 5.3 Advice for firefighters**

**. Protective equipment:** Do not inhale explosion gases or combustion gases.

### 6: Accidental release measures

**. 6.1 Personal precautions, protective equipment and emergency procedures** Wear protective clothing.

**. 6.2 Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

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- . **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- . **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7: Handling and storage

- . **7.1 Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.
- . **Information about protection against explosions and fires:** No special measures required.
- . **7.2 Conditions for safe storage, including any incompatibilities**
- . **Storage:**
- . **Requirements to be met by storerooms and receptacles:** No special requirements.
- . **Information about storage in one common storage facility:** Do not store together with acids.
- . **Further information about storage conditions:**  
Protect from heat and direct sunlight.  
Store under lock and key and out of the reach of children.  
Recommended storage temperature: 15-25 °C  
Protect from exposure to the light.  
Store under lock and key and with access restricted to technical experts or their assistants only.
- . **7.3 Specific end use(s)** No further relevant information available.

### 8: Exposure controls/personal protection

- . **Additional information about design of technical systems:** No further data; see item 7.
- . **8.1 Control parameters**

. **Components with limit values that require monitoring at the workplace:**

**123-31-9 hydroquinone (1,4-dihydroxybenzene) (3-5%)**

PEL (USA)	2 mg/m <sup>3</sup>
REL (USA)	Short-term value: C 2* mg/m <sup>3</sup> *15-min
TLV (USA)	1 mg/m <sup>3</sup> SEN

**1330-43-4 disodium tetraborate, anhydrous (1- <3%)**

REL (USA)	1 mg/m <sup>3</sup> anhydrous
TLV (USA)	Short-term value: 6* mg/m <sup>3</sup> Long-term value: 2* mg/m <sup>3</sup> *as inhalable fraction

**1310-73-2 sodium hydroxide (caustic soda) (1- <2%)**

PEL (USA)	2 mg/m <sup>3</sup>
REL (USA)	Short-term value: C 2 mg/m <sup>3</sup>
TLV (USA)	Short-term value: C 2 mg/m <sup>3</sup>

- . **Additional information:** The lists that were valid during the creation were used as basis.

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### . 8.2 Exposure controls

#### . Personal protective equipment:

#### . General protective and hygienic measures:

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Do not inhale gases / fumes / aerosols.

#### . Breathing equipment: Ensure adequate ventilation

#### . Protection of hands:



Protective gloves

Impervious gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

#### . Material of gloves

- Butyl rubber, BR
- Nitrile rubber, NBR
- Neoprene gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

#### . Penetration time of glove material

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Glove material	breakthroug-time	layer thickness
Butyl rubber:	>480 min	≥0,4mm
Nitrile rubber:	>480 min	≥0,38mm
Neoprene:	>240 min	≥0,65mm

#### . Eye protection:



Tightly sealed goggles

#### . Body protection: Protective work clothing

## 9: Physical and chemical properties

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

#### . General Information

#### . Appearance:

<b>Form:</b>	Fluid
<b>Color:</b>	Colorless
<b>Odor:</b>	Recognizable

. pH-value at 20 °C (68 °F): 11.3

#### . Change in condition

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	> 100 °C (> 212 °F)

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- |  |   |
|--|---|
| . <b>Flash point:</b>                            | Not applicable.                               |
| . <b>Auto igniting:</b>                          | Product is not selfigniting.                  |
| . <b>Danger of explosion:</b>                    | Product does not present an explosion hazard. |
| . <b>Vapor pressure at 20 °C (68 °F):</b>        | 23 hPa (17 mm Hg)                             |
| . <b>Density at 20 °C (68 °F):</b>               | 1.289 g/cm <sup>3</sup> (10.757 lbs/gal)      |
| . <b>Solubility in / Miscibility with Water:</b> | Fully miscible.                               |
| . <b>Solvent content:</b>                        |   |
| <b>Organic solvents:</b>                         | 0.0 %   |
| <b>Water:</b>                                    | >80 %   |
| . <b>9.2 Other information</b>                   | No further relevant information available.    |

### 10: Stability and reactivity

- . **10.1 Reactivity**
- . **10.2 Chemical stability**
- . **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- . **10.3 Possibility of hazardous reactions** Reacts with acids, alkalis and oxidizing agents.
- . **10.4 Conditions to avoid** No further relevant information available.
- . **10.5 Incompatible materials:** No further relevant information available.
- . **10.6 Hazardous decomposition products:**  
Nitrogen oxides (NOx)  
Irritant gases/vapors

### 11: Toxicological information

- . **11.1 Information on toxicological effects**
- . **Acute toxicity:**

. **LD/LC50 values that are relevant for classification:**

**123-31-9 hydroquinone (1,4-dihydroxybenzene)**

Oral	LD50	320 mg/kg (rat)
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**1310-73-2 sodium hydroxide (caustic soda)**

Oral	LD50	>2000 mg/kg (rat)
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- . **Primary irritant effect:**
- . **on the skin:** Irritant to skin and mucous membranes.
- . **on the eye:** Strong irritant with the danger of severe eye injury.
- . **Sensitization:** Sensitization possible through skin contact.
- . **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful

- . **Carcinogenic categories**

. **IARC (International Agency for Research on Cancer)**

123-31-9	hydroquinone (1,4-dihydroxybenzene)	3
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**. NTP (National Toxicology Program)**

None of the ingredients is listed.

### 12: Ecological information

**. 12.1 Toxicity**

**. Aquatic toxicity:**

**123-31-9 hydroquinone (1,4-dihydroxybenzene)**

EC50 48h: 0.29 mg/l (daphnia magna (Großer Wasserfloh))

LC50 96h: 0.044 mg/L (Pimephales promelas)

**1310-73-2 sodium hydroxide (caustic soda)**

EC50 24h: 76 mg/l (daphnia magna (Großer Wasserfloh))

LC50 48h: 99 mg/L (Lepomis macrochirus)

96h: 45.4 mg/L (Oncorhynchus mykiss)

**. 12.2 Persistence and degradability** No further relevant information available.

**. 12.3 Bioaccumulative potential** No further relevant information available.

**. 12.4 Mobility in soil** No further relevant information available.

**. Additional ecological information:**

**. General notes:**

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

Water hazard class 3 (Self-assessment): extremely hazardous for water

Danger to drinking water if even extremely small quantities leak into the ground.

**. 12.5 Results of PBT and vPvB assessment**

**. PBT:** Not applicable.

**. vPvB:** Not applicable.

**. 12.6 Other adverse effects** No further relevant information available.

### 13: Disposal considerations

**. 13.1 Waste treatment methods**

**. Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

**. Uncleaned packagings:**

**. Recommendation:** Disposal must be made according to official regulations.

**. Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14: Transport information

**. 14.1 UN-Number**

**. DOT**

Void

**. ADR, IMDG, IATA**

UN3082

**. 14.2 UN proper shipping name**

**. DOT**

Void

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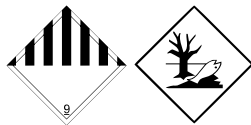
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. <b>IMDG</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (hydroquinone), MARINE POLLUTANT
. <b>IATA</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (hydroquinone)

**. 14.3 Transport hazard class(es)**

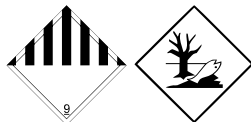
. <b>DOT</b> . <b>Class</b>	Void
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**. ADR**



. <b>Class</b> . <b>Label</b>	9 (M6) Miscellaneous dangerous substances and articles 9
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**. IMDG, IATA**



. <b>Class</b> . <b>Label</b>	9 Miscellaneous dangerous substances and articles. 9
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**. 14.4 Packing group**

. <b>DOT</b> . <b>ADR, IMDG, IATA</b>	Void III
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**. 14.5 Environmental hazards:**

. <b>Marine pollutant:</b>  . <b>Special marking (ADR):</b> . <b>Special marking (IATA):</b>	Product contains environmentally hazardous substances: hydroquinone Yes Symbol (fish and tree) Symbol (fish and tree) Symbol (fish and tree)
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**. 14.6 Special precautions for user**

. <b>Danger code (Kemler):</b> . <b>EMS Number:</b>	Warning: Miscellaneous dangerous substances and articles 90 F-A,S-F
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**. 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

**. UN "Model Regulation":**

-

**15: Regulatory information**

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

**. Section 355 (extremely hazardous substances):**

123-31-9	hydroquinone (1,4-dihydroxybenzene)
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**. Section 313 (Specific toxic chemical listings):**

123-31-9	hydroquinone (1,4-dihydroxybenzene)
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**. TSCA (Toxic Substances Control Act):**

7732-18-5	water
123-31-9	hydroquinone (1,4-dihydroxybenzene)
10043-35-3	boric acid
584-08-7	potassium carbonate
7758-02-3	potassium bromide
7601-54-9	trisodium orthophosphate
92-43-3	1-phenyl-3-pyrazolidone (Phenidone A )
95-14-7	benzotriazole
86-93-1	1-phenyltetrazole-5-thiol/1 phenyl-5-mercapto-tetrazole (PMT)

**. Proposition 65**

**. Chemicals known to cause cancer:**

None of the ingredients is listed.

**. Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

**. Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

**. Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

**. Cancerogenity categories**

**. EPA (Environmental Protection Agency)**

None of the ingredients is listed.

**. TLV (Threshold Limit Value established by ACGIH)**

123-31-9	hydroquinone (1,4-dihydroxybenzene)	A3
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**. NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

**. OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**. 15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**. Contact:** e-mail: sida@tetenal.com

**. Date of preparation / last revision** 03/31/2014 / 1

**. Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

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NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1  
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1  
Muta. 2: Germ cell mutagenicity, Hazard Category 2  
Carc. 2: Carcinogenicity, Hazard Category 2  
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

. \* **Data compared to the previous version altered.**

USA