

# SUPERFIX MRP

## Application

For use with all roller and spray processors.

**SUPERFIX MRP** is suitable for all areas of X-ray diagnostics, including dental film processing, and for fixing X-ray films for non-destructive testing (NDT).

## Characteristics

**SUPERFIX MRP** has a high fixing speed, and so ensures complete film fixing during the short treatment period, even in fast-running processors. Most screenless films can be processed in a cycle lasting just 3.5 minutes. Hardeners make the emulsion coating more resistant to physical damage, smooth transport through the processor is ensured, and drying speeded up. Virtually odourless due to special additives.

**SUPERFIX MRP** is suitable for use in fixer recycling equipment. The concentrates will keep at least 24 months at storage temperatures between 5°C and 30°C. Freezing and excessive heat should be avoided.

## Pack sizes

**SUPERFIX MRP** is a two-part fixer concentrate, and is supplied in a pack for 2 x 20 litres and 2 x 10 litres of ready-to-use fixer. The 2 x 10 litres pack of fixer solution is intended specifically for processors with small replenisher tanks, and processors with a low film throughput. Usable with all TETENAL chemical mixers. With a TETENAL adapter **SUPERFIX MRP** can also be made up with any other chemical mixers on the market.

## Fixer temperature

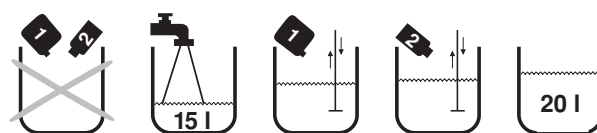
Should not be more than 1°C to 2°C under the developer temperature, but at least 25°C.

## Replenishment

**SUPERFIX MRP** should be replenished at 70 to 80 ml per 35 x 35 cm sheet. If the percentage of screenless films is over 5 %, raise the fixer replenishment rate by 10 %.

## Mixing instructions

Never mix Part 1 and 2 concentrates! Use 15 litres of water. Parts 1 and 2 are stirred in, and produce 20 litres of ready-to-use fixer.



When filling the machine tank, make sure that no fixer solution gets into the developer tank.

Therefore it is advisable to put the fixer in first.

## Technical data

pH of ready-to-use solution: 4.15 - 4.35 (20°C)

Specific gravity of ready-to-use solution: 1.080 - 1.090 (20°C)

## Certification

TETENAL applies a quality management system certified to DIN EN ISO 9001.

This product complies with directive 93/42 EEC of 14<sup>th</sup> June 1993 with regard to medical products (CE labelling).

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 03.06.2010

version no: 2

Revision: 03.06.2010

### 1 Identification of the substance/preparation and of the company/undertaking

- **Product details**
- **Trade name:** Superfix 25 RTU 5L ready-to-use solution
- **Article number:** 104026, 44626, 2226/1
- **Application of the substance / the preparation** Fixing agent for X-ray films
- **Manufacturer/Supplier:**  
TETENAL AG & CO. KG  
Schützenwall 31-35  
D-22844 Norderstedt / Germany  
Tel.: +49 040 521 45-0  
Fax: +49 040-52145-296  
www.tetenal.com  
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- TETENAL LTD., Unit 1, Foxholes Road  
Leicester LE3 1TH / Great Britain  
Tel.: +44 0870 460 8996 Fax: +44 0870 460 8997, e.mail: uk@tetenal.com, www.tetenal.co.uk
- **Further information obtainable from:** Department environment and safety. E-mail: info@tetenal.com
- **Information in case of emergency:** Poison Information Centre Berlin (Germany): +49 (0) 30 - 30686 790

### 2 Hazards identification

- **Hazard description:** Not applicable.
- **Information concerning particular hazards for human and environment:**  
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**  
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
- **GHS label elements**  
Safety data sheet available on request.

### 3 Composition/information on ingredients

- **Chemical characterization**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

|                   |             |                                                                                                      |     |
|-------------------|-------------|------------------------------------------------------------------------------------------------------|-----|
| CAS: 64-19-7      | acetic acid |  C; R 10-35     | <1% |
| EINECS: 200-580-7 |             | Danger:  3.2/1A |     |
|                   |             | Warning:  2.6/3 |     |

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

### 4 First aid measures

- **General information:** Immediately remove any clothing/shoes soiled by the product.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several (15 min) under running water.
- **After swallowing:** If symptoms persist consult doctor.

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**Trade name: Superfix 25 RTU 5L ready-to-use solution**

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### 5 Fire-fighting measures

- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Person-related safety precautions:** Ensure adequate ventilation
- **Measures for environmental protection:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Pick up mechanically.
- **Additional information:** No dangerous substances are released.

### 7 Handling and storage

- **Handling:**
- **Information for safe handling:** No special measures required.
- **Information about fire - and explosion protection:** No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **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: 5-25°C

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Ingredients with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
The usual precautionary measures are to be adhered to when handling chemicals.  
Avoid contact with the eyes and skin.
- **Respiratory protection:** Ensure adequate ventilation
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**

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### according to 1907/2006/EC, Article 31

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**Trade name: Superfix 25 RTU 5L ready-to-use solution**

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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.

Butyl rubber, BR

Nitrile rubber, NBR

Neoprene gloves

· **Penetration time of glove material**

Glove material: Butyl rubber with breakthrough-time:  $\geq 480$  min, layer thickness:  $\geq 0,4$  mmGloves made of nitrile rubber with layer thickness  $>0,38$ mm and breakthrough-time  $>480$ minGlove material: Neopren with breakthrough time:  $>240$  min, layer thickness:  $>0,65$  mm

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

· **Eye protection:** Safety glasses

· **Body protection:** Protective work clothing

## 9 Physical and chemical properties

· **General Information**

|                |              |
|----------------|--------------|
| <b>Form:</b>   | Fluid        |
| <b>Colour:</b> | Colourless   |
| <b>Odour:</b>  | Recognizable |

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

· **Flash point:** Not applicable.

· **Self-igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Vapour pressure at 20°C:** 23 hPa

· **Density at 20°C:** 1.082 g/cm<sup>3</sup>

· **Solubility in / Miscibility with water:** Fully miscible.

· **pH-value at 20°C:** 4.3

· **Solvent content:**

Organic solvents: 0.8 %

Water:  $>90$  %

## 10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **Materials to be avoided:**

· **Dangerous reactions** No dangerous reactions known.

· **Dangerous decomposition products:** Irritant gases/vapours

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## Safety Data Sheet

### according to 1907/2006/EC, Article 31

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### 11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

### 12 Ecological information

- **Additional ecological information:**
- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow product to reach ground water, water course or sewage system.

### 13 Disposal considerations

- **Product:**
- **Recommendation**

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

Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

- **European waste catalogue**

|          |                                             |
|----------|---------------------------------------------|
| 09 01 05 | bleach solutions and bleach fixer solutions |
|----------|---------------------------------------------|

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### 14 Transport information

- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -

- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No

- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

- **UN "Model Regulation":** -

### 15 Regulatory information

- **Labelling according to EU guidelines:**
- Observe the general safety regulations when handling chemicals.

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## Safety Data Sheet

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Revision: 03.06.2010

**Trade name: Superfix 25 RTU 5L ready-to-use solution**

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The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (German GefStoffV).

**· Special labelling of certain preparations:**

Safety data sheet available for professional user on request.

### 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.

**· Relevant R-phrases**

10 Flammable.

35 Causes severe burns.

**· Department issuing MSDS:** Department product safety**· Contact:** e-mail: sida@tetenal.com**· Abbreviations and acronyms:**

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

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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

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# ROENTOROLL HC

## Application

Suitable for all roller and spray processors. **ROENTOROLL HC** can be used for all areas of X-ray diagnostics, and for processing X-ray films for non-destructive testing (NDT).

## Characteristics

The high speed yield for X-ray films and simultaneous low emulsion-fog level enable the exposure time to be cut (lowering of dose), or the developing temperature to be reduced as against conventional X-ray film developers. Standard X-ray films develop medium to high contrast in **ROENTOROLL HC**, i.e. all contrasts required under practical conditions in X-ray diagnostics. **ROENTOROLL HC** has good hardening characteristics, which ensures that roller imprints and other faults do not appear during film processing. The concentrates will keep for at least 24 months at storage temperatures between 5°C and 30°C.

## Pack sizes

**ROENTOROLL HC** is a three-part developer concentrate, and is supplied in a pack for 2 x 20 litres and 2 x 10 litres of ready-to-use developer. The pack for 2 x 10 litres replenisher solution is intended specifically for processors with small replenisher tanks, and processors with a low throughput or little continuous processing. Usable with all TETENAL chemical mixers. With a TETENAL adapter **ROENTOROLL HC** can also be made up with any other chemical on the market.

## Developer temperature

The developing temperature depends on the X-ray film material used and on the immersion time in the developer, which varies according to processor type.

The standard figures are:

|             |                                           |
|-------------|-------------------------------------------|
| 32°C - 34°C | at 90 sec total processing time           |
| 29°C - 31°C | at 3.5 min total processing time          |
| 25°C - 27°C | at 7 min and longer total processing time |

# ROENTOROLL HC

## Replenishment

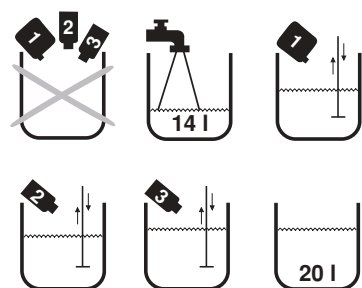
**ROENTOROLL HC** should be replenished at 50 to 75 ml per 35 x 35 cm sheet. The replenishment rate needed for a processor depends on the film throughput. If throughput is low and there are long intervals between processing, the higher replenishment rate must be used. If throughput is high the lower replenishment rate can be used.

## Mixing instructions

Never mix Part 1, 2 and 3 concentrates!

Use 14 litres of water. Parts 1, 2 and 3 are stirred in, and produce 20 litres of ready-to-use replenisher.

**For fresh mixes in the developer tank, add 20 ml of TETENAL starter (article no. 105445) to the replenisher solution per litre tank volume.**



## Certification

TETENAL applies a quality management system certified to DIN EN ISO 9001. This product complies with directive 93/42 EEC of 14th June 1993 with regard to medical products (CE labelling).

# Safety Data Sheet

## according to 1907/2006/EC, Article 31

Printing date 03.06.2010

version no: 1

Revision: 03.06.2010

### 1 Identification of the substance/preparation and of the company/undertaking

- **Product details**

- **Trade name:** Roentoroll 25 RTU 2x5L, ready-to-use solution

- **Article number:** 104025, 44625, 1362/1

- **Application of the substance / the preparation** Developer for X-ray films

- **Manufacturer/Supplier:**

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D-22844 Norderstedt / Germany

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Fax: +49 040-52145-296

www.tetenal.com

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Leicester LE3 1TH / Great Britain

Tel.: +44 0870 460 8996 Fax: +44 0870 460 8997, e.mail: uk@tetenal.com, www.tetenal.co.uk

- **Further information obtainable from:** Department environment and safety. E-mail: info@tetenal.com

- **Information in case of emergency:** Poison Information Centre Berlin (Germany): +49 (0) 30 - 30686 790

### 2 Hazards identification

- **Hazard description:**



Xn Harmful

- **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

R 40 Limited evidence of a carcinogenic effect.

R 43 May cause sensitisation by skin contact.

R 68 Possible risk of irreversible effects.

- **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- **GHS label elements**

**Warning**

H341 - Suspected of causing genetic defects.

H351 - Suspected of causing cancer.

**Warning**

H319 - Causes serious eye irritation.

H317 - May cause an allergic skin reaction.

- **Prevention:**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

- **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.

P321 Specific treatment (see on this label).

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## Safety Data Sheet

### according to 1907/2006/EC, Article 31

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Revision: 03.06.2010

**Trade name: Roentoroll 25 RTU 2x5L, ready-to-use solution**

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- **Storage:**  
P405 Store locked up.
- **Disposal:**  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### 3 Composition/information on ingredients

- **Chemical characterization**
- **Description:** Mixture of substances listed below with nonhazardous additions.

#### · **Dangerous components:**

|                                      |                                                                                                                                                                               |        |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| CAS: 123-31-9<br>EINECS: 204-617-8   | Hydroquinone (1,4-dihydroxybenzene)<br>Carc. Cat. 3, Muta. Cat. 3;  Xn,  Xi,  N; R 22-40-41-43-68-50<br>Danger:  3.3/1<br>Warning:  3.5/2, 3.6/2;  4.1.A/1;  3.1.O/4, 3.4.S/1 | <2.5%  |
| CAS: 111-46-6<br>EINECS: 203-872-2   | diethylene glycol<br>Xn; R 22<br>Warning:  3.1.O/4                                                                                                                            | 0.5-2% |
| CAS: 111-30-8<br>EINECS: 203-856-5   | glutaral<br>T,  C,  N; R 23/25-34-42/43-50<br>Danger:  3.1.O/3, 3.1.I/3;  3.4.R/1;  3.2/1B<br>Warning:  4.1.A/1; 3.4.S/1                                                      | 0.5-2% |
| CAS: 140-01-2<br>EINECS: 205-391-3   | Sodium diethylene triamine pentaacetic acid (DTPA-Na5)<br>Xi; R 36<br>Warning:  3.3/2                                                                                         | 0.5-2% |
| CAS: 13047-13-7<br>EINECS: 235-920-3 | 4-(hydroxymethyl)-4-methyl-1-phenylpyrazolidin-3-one<br>Xn,  Xi,  N; R 22-36-43-51/53<br>Warning:  3.1.O/4, 3.3/2, 3.4.S/1<br>4.1.C/2                                         | 0.5-2% |

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

### 4 First aid measures

- **General information:** Immediately remove any clothing/shoes soiled by the product.
- **After inhalation:**  
Supply fresh air and to be sure call for a doctor.  
In case of unconsciousness place patient stably in side position for transportation.  
Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. Then consult a doctor.  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.

### 5 Fire-fighting measures

- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards caused by the substance, its products of combustion or resulting gases:**  
Under certain fire conditions, traces of other toxic gases cannot be excluded.

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## Safety Data Sheet

### according to 1907/2006/EC, Article 31

Printing date 03.06.2010

version no: 1

Revision: 03.06.2010

**Trade name: Roentoroll 25 RTU 2x5L, ready-to-use solution**

 · **Protective equipment:** No special measures required.

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### 6 Accidental release measures

- **Person-related safety precautions:** Ensure adequate ventilation
- **Measures for environmental protection:**
  - Dilute with plenty of water.
  - Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.
  - Pick up mechanically.
  - Ensure adequate ventilation.

### 7 Handling and storage

- **Handling:**
- **Information for safe handling:**
  - Ensure good ventilation/exhaustion at the workplace.
  - Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:**
  - Store away from foodstuffs.
  - Store away from oxidizing agents.
- **Further information about storage conditions:**
  - Store in cool, dry conditions in well sealed receptacles.
  - Protect from heat and direct sunlight.
  - Protect from exposure to the light.
  - Store under lock and key and out of the reach of children.
  - Recommended storage temperature: 5-25°C

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

| · <b>Ingredients with limit values that require monitoring at the workplace:</b> |                                                    |
|----------------------------------------------------------------------------------|----------------------------------------------------|
| <b>123-31-9 Hydroquinone (1,4-dihydroxybenzene) (1-5%)</b>                       |                                                    |
| WEL                                                                              | Long-term value: 0.5 mg/m <sup>3</sup>             |
| <b>111-46-6 diethylene glycol (0.5-2%)</b>                                       |                                                    |
| WEL                                                                              | Long-term value: 101 mg/m <sup>3</sup> , 23 ppm    |
| <b>111-30-8 glutaral (0.5-2%)</b>                                                |                                                    |
| WEL                                                                              | Short-term value: 0.2 mg/m <sup>3</sup> , 0.05 ppm |
|                                                                                  | Long-term value: 0.2 mg/m <sup>3</sup> , 0.05 ppm  |
|                                                                                  | Sen                                                |

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

- **Personal protective equipment:**

- **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.

- Immediately remove all soiled and contaminated clothing

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## Safety Data Sheet

### according to 1907/2006/EC, Article 31

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**Trade name: Roentoroll 25 RTU 2x5L, ready-to-use solution**

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Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

**· Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Not necessary if room is well-ventilated.

required at the appearance from fumes/vapours/aerosol. Filter ABEK

**· Protection of hands:**


Protective gloves

Impervious gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

**· Material of 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.

Butyl rubber, BR

Nitrile rubber, NBR

**· Penetration time of glove material**
Glove material: Butyl rubber with breakthrough-time:  $\geq 480$  min, layer thickness:  $\geq 0,4$  mmGloves made of nitrile rubber with layer thickness  $> 0,38$  mm and breakthrough-time  $> 480$  minGlove material: Neopren with breakthrough time:  $> 240$  min, layer thickness:  $> 0,65$  mm

-

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

**· Eye protection:**


Tightly sealed goggles

**· Body protection: Protective work clothing**

## 9 Physical and chemical properties

**· General Information**

|                |                                    |
|----------------|------------------------------------|
| <b>Form:</b>   | Fluid                              |
| <b>Colour:</b> | According to product specification |
| <b>Odour:</b>  | Characteristic                     |

**· Change in condition**
**Melting point/Melting range:** Undetermined.**Boiling point/Boiling range:**  $> 100^{\circ}\text{C}$ 
**· Flash point:** Not applicable.

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## Safety Data Sheet

### according to 1907/2006/EC, Article 31

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|                                                  |                                               |
|--------------------------------------------------|-----------------------------------------------|
| · <b>Self-igniting:</b>                          | Product is not selfigniting.                  |
| · <b>Danger of explosion:</b>                    | Product does not present an explosion hazard. |
| · <b>Vapour pressure at 20°C:</b>                | 23 hPa                                        |
| · <b>Density at 20°C:</b>                        | 1.074 g/cm <sup>3</sup>                       |
| · <b>Solubility in / Miscibility with water:</b> | Fully miscible.                               |
| · <b>pH-value at 20°C:</b>                       | 10.3                                          |
| · <b>Solvent content:</b>                        |                                               |
| <b>Organic solvents:</b>                         | 1.6 %                                         |
| <b>Water:</b>                                    | 88.1 %                                        |
| · <b>Solids content:</b>                         | 10.1 %                                        |

## 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
- **Dangerous reactions** No dangerous reactions known.
- **Dangerous decomposition products:** Irritant gases/vapours

## 11 Toxicological information

- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

### 123-31-9 Hydroquinone (1,4-dihydroxybenzene)

|        |      |                   |
|--------|------|-------------------|
| Oral   | LD50 | 320 mg/kg (rat)   |
| Dermal | LD50 | >900 mg/kg (rat)  |
|        | LD50 | 72h: 1 mg/l (alg) |

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**  
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
Irritant
- **Sensitisation** May cause sensitisation by skin contact.

## 12 Ecological information

- **Additional ecological information:**
- **General notes:**  
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water  
Do not allow product to reach ground water, water course or sewage system.  
Danger to drinking water if even small quantities leak into the ground.

GB

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## Safety Data Sheet

### according to 1907/2006/EC, Article 31

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### 13 Disposal considerations

- **Product:**

- **Recommendation**

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

- **European waste catalogue**

|          |                                               |
|----------|-----------------------------------------------|
| 09 01 01 | water-based developer and activator solutions |
|----------|-----------------------------------------------|

- **Uncleaned packaging:**

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

- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### 14 Transport information

- **Land transport ADR/RID (cross-border)**

- **ADR/RID class:** -

- **Maritime transport IMDG:**

- **IMDG Class:** -

- **Marine pollutant:** No

- **Air transport ICAO-TI and IATA-DGR:**

- **ICAO/IATA Class:** -

- **UN "Model Regulation":** -

### 15 Regulatory information

- **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

- **Code letter and hazard designation of product:**



Xn Harmful

- **Hazard-determining components of labelling:**

Hydroquinone (1,4-dihydroxybenzene)

- **Risk phrases:**

40 Limited evidence of a carcinogenic effect.

43 May cause sensitisation by skin contact.

68 Possible risk of irreversible effects.

- **Safety phrases:**

2 Keep out of the reach of children.

23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37 Wear suitable protective clothing and gloves.

60 This material and its container must be disposed of as hazardous waste.

GB

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### 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.

· **Relevant R-phrases**

- 22 Harmful if swallowed.
- 23/25 Toxic by inhalation and if swallowed.
- 34 Causes burns.
- 36 Irritating to eyes.
- 40 Limited evidence of a carcinogenic effect.
- 41 Risk of serious damage to eyes.
- 42/43 May cause sensitisation by inhalation and skin contact.
- 43 May cause sensitisation by skin contact.
- 50 Very toxic to aquatic organisms.
- 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- 68 Possible risk of irreversible effects.

· **Department issuing MSDS:** Department product safety

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

· **Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
- ICAO: International Civil Aviation Organization
- ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent

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

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