

## Material Safety Data Sheet

### According to 91/155 EEC

Printing date 15.05.2006

Reviewed on 15.05.2006

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

· **Product details**

· **Trade name:** Rodinal

· **Article number:** BQJP7, BVL2E, BVL3G, 5JCM6, BQK46

· **Application of the substance / the preparation**

Photographic black and white developer concentrate

· **Manufacturer/Supplier:**

a&o imaging services uk ltd.

27 Great West Road

Brentford

Middlesex

TW8 9AX

UK

· **Further information obtainable from:**

Productmanagement, Tel.: + 49 7042 913-41, Fax: + 49 7042 913-18

· **Information in case of emergency:**

EUROPE :

Phone : + 49 214 30 99300 (Security service Bayer Industries Services Leverkusen)

#### 2 Composition/information on ingredients

· **Chemical characterization**

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

· **Dangerous components:**

CAS: 123-30-8 EINECS: 204-616-2	4-aminophenol	Muta. Cat. 3;  Xn,  N; R 20/22-68-50/53	4.1%
CAS: 1310-58-3 EINECS: 215-181-3	potassium hydroxide	C; R 22-35	2.7%

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

#### 3 Hazards identification

· **Hazard description:**



C Corrosive

N Dangerous for the environment

· **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 34 Causes burns.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 68 Possible risk of irreversible effects.

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**24 hour transportation emergency telephone number: Chemtrec 800-424-9300**

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**· Classification system:**

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

### 4 First aid measures

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **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.
- **After swallowing:** Drink plenty of water and provide fresh air. Call for a doctor immediately.

### 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:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**  
Inform respective authorities in case of seepage into water course or sewage system.  
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).  
Use neutralizing agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.

### 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:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.

### 8 Exposure controls/personal protection

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

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**Ingredients with limit values that require monitoring at the workplace:**
**1310-58-3 potassium hydroxide**

 WEL Short-term value: 2 mg/m<sup>3</sup>

 · **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

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

 · **Respiratory protection:** Not required.

 · **Protection of hands:**


Protective 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.

 · **Penetration time of glove material**

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

 · **Eye protection:**


Tightly sealed goggles

## 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°C

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· <b>Flash point:</b>	Not applicable.
· <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>	1.283 g/cm <sup>3</sup>
· <b>Solubility in / Miscibility with water:</b>	Fully miscible.
· <b>pH-value at 20°C:</b>	14
· <b>Viscosity:</b>	
<b>Kinematic at 20°C:</b>	11 s (DIN 53211/4)
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	56.8 %
· <b>Solids content:</b>	43.2 %

### 10 Stability and reactivity

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

### 11 Toxicological information

- **Acute toxicity:**

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

**123-30-8 4-aminophenol**

Oral	LD50	375 mg/kg (rat)
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**1310-58-3 potassium hydroxide**

Oral	LD50	273 mg/kg (rat)
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- **Primary irritant effect:**

- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.

- **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:

Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

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### 12 Ecological information

· **Ecotoxicological effects:**

· **Remark:** Toxic for fish

· **General notes:**

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

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

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

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.

### 13 Disposal considerations

· **Product:**

· **Recommendation**

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

· **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:** 8 (C5) Corrosive substances.

· **Danger code (Kemler):** 80

· **UN-Number:** 1814

· **Packaging group:** II

· **Hazard label:** 8

· **Description of goods:** 1814 POTASSIUM HYDROXIDE SOLUTION

· **Maritime transport IMDG:**



· **IMDG Class:** 8

· **UN Number:** 1814

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- **Label** 8
- **Packaging group:** III
- **Marine pollutant:** No
- **Proper shipping name:** POTASSIUM HYDROXIDE SOLUTION

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


- **ICAO/IATA Class:** 8
- **UN/ID Number:** 1814
- **Label** 8
- **Packaging group:** III
- **Proper shipping name:** POTASSIUM HYDROXIDE SOLUTION

### 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:**

C Corrosive  
N Dangerous for the environment

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

4-aminophenol  
potassium hydroxide

**· Risk phrases:**

34 Causes burns.  
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
68 Possible risk of irreversible effects.

**· Safety phrases:**

1/2 Keep locked up and out of the reach of children.  
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.  
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**· National regulations:**

Class	Share in %
Wasser	56.8
I	4.1

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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**

20/22 Harmful by inhalation and if swallowed.

22 Harmful if swallowed.

35 Causes severe burns.

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

68 Possible risk of irreversible effects.

**· Department issuing MSDS: Productmanagement department**

**· Contact: Mr. Vollhofer, a&o imaging solutions, Tel.: + 49 7042 913-43**