

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 18.06.2014

version no: 1

Revision: 18.06.2014

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

. 1.1 Product identifier

. Trade name: ADOX RODINAL

. Article number: 105100

. 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 Black and white developer for photographic use

. 1.3 Details of the supplier of the safety data sheet

. Manufacturer/Supplier:

ADOX Fotowerke GmbH
Pieskower Str. 30 A
15526 Bad Saarow / Germany
www.adox.de

. Further information obtainable from: ADOX: +49 (0) 33631 6459-0 E-mail: info@adox.de

. 1.4 Emergency telephone number: Poison Information Centre Berlin (Germany): +49 (0) 30 - 30686 790

SECTION 2: Hazards identification

. 2.1 Classification of the substance or mixture

. Classification according to Regulation (EC) No 1272/2008



GHS08

Muta. 2 H341 Suspected of causing genetic defects.



GHS05

Skin Corr. 1B H314 Causes severe skin burns and eye damage.



GHS09

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

. Classification according to Directive 67/548/EEC or Directive 1999/45/EC



C; Corrosive

R34: Causes burns.



Xn; Harmful

R68: Possible risk of irreversible effects.



N; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic 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.

. Classification system:

The classification is according to the latest editions of the EU-lists, and extended by 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 labelled according to the CLP regulation.

. Hazard pictograms

GHS05

GHS08

GHS09

. Signal word Danger**. Hazard-determining components of labelling:**

potassium hydroxide

4-aminophenol

. Hazard statements

H314 Causes severe skin burns and eye damage.

H341 Suspected of causing genetic defects.

H411 Toxic to aquatic life with long lasting effects.

. Precautionary statements

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

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

P310 Immediately call a POISON CENTER or doctor/physician.

P501 Dispose of contents/container in accordance with local regulations.

. 2.3 Other hazards**. Results of PBT and vPvB assessment****. PBT:** Not applicable.**. vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

. 3.2 Chemical characterization: Mixtures**. Description:** Mixture of substances listed below and with nonhazardous additions.**. Dangerous components:**

CAS: 123-30-8 EINECS: 204-616-2 Index number: 612-128-00-X	4-aminophenol ☒ Xn R20/22-68; ☒ N R50/53 Muta. Cat. 3 ☒ Muta. 2, H341; ☒ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ☒ Acute Tox. 4, H302; Acute Tox. 4, H332	1-5%
CAS: 1310-58-3 EINECS: 215-181-3 Index number: 019-002-00-8 Reg.nr.: 01-2119487136-33	potassium hydroxide ☒ C R35; ☒ Xn R22 ☒ Met. Corr.1, H290; Skin Corr. 1A, H314; ☒ Acute Tox. 4, H302	2-5%

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

SECTION 4: First aid measures

. 4.1 Description of first aid measures**. General information:** Immediately remove any clothing/shoes 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.

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- . **After swallowing:**
 - Do not induce vomiting; call for medical help immediately.
 - Drink plenty of water and provide fresh air. Call for a doctor immediately.
- . **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.

SECTION 5: Firefighting measures

- . **5.1 Extinguishing media**
- . **Suitable extinguishing agents:**
 - CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- . **5.2 Special hazards arising from the substance or mixture**
 - Nitrogen oxides (NO_x)
 - Carbon monoxide (CO)
 - Sulphur dioxide (SO₂)
 - Under certain fire conditions, traces of other toxic gases cannot be excluded.
- . **5.3 Advice for firefighters**
- . **Protective equipment:** Do not inhale explosion gases or combustion gases.

SECTION 6: Accidental release measures

- . **6.1 Personal precautions, protective equipment and emergency procedures**
 - Wear protective equipment. Keep unprotected persons away.
 - Ensure adequate ventilation
- . **6.2 Environmental precautions:**
 - 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.
- . **6.3 Methods and material for containment and cleaning up:**
 - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 - Use neutralizing agent.
 - Dispose contaminated material as waste according to item 13.
 - Pick up mechanically.
 - 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.

SECTION 7: Handling and storage

- . **7.1 Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- . **Information about fire - and explosion protection:** Protect from heat.
- . **7.2 Conditions for safe storage, including any incompatibilities**
- . **Storage:**
 - . **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
 - . **Information about storage in one common storage facility:**
 - Store away from foodstuffs.
 - Do not store together with acids.
 - Store away from oxidizing agents.
 - . **Further information about storage conditions:**
 - Keep container tightly sealed.
 - Store in cool, dry conditions in well sealed receptacles.
 - Protect from heat and direct sunlight.

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- Store under lock and key and out of the reach of children.
- Recommended storage temperature: 5-25 °C
- Protect from exposure to the light.
- . **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

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

. 8.1 Control parameters

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

1310-58-3 potassium hydroxide (1-5%)

WEL Short-term value: 2 mg/m ³

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

. 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.
- Avoid contact with the eyes and skin.

- . **Respiratory protection:** required at the appearance from fumes/vapours/aerosol. Filter ABEK

. **Protection of hands:**



Protective gloves

Impervious gloves

Alkaline resistant 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**

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

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

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. **Body protection:** Protective work clothing

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SECTION 9: Physical and chemical properties

. 9.1 Information on basic physical and chemical properties

. General Information

. Appearance:

. Form:	Fluid
. Colour:	Pale
. Odour:	Phenol-like

. **pH-value at 25 °C:** 14

. Change in condition

. **Melting point/Melting range:** Undetermined.
 . **Boiling point/Boiling range:** > 100 °C

. **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:** 1.386 g/cm³. **Solubility in / Miscibility with water:** Fully miscible.

. Solvent content:

. Organic solvents:	0.0 %
. Water:	>55 %

. **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

. 10.1 Reactivity

. 10.2 Chemical stability

. **Thermal decomposition / conditions to be avoided:** Stable at environment temperature.. **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:

Nitrogen oxides (NO_x)
 Carbon monoxide (CO)
 Sulphur dioxide (SO₂)
 Under certain fire conditions, traces of other toxic gases cannot be excluded.

. **10.6 Hazardous decomposition products:** Irritant gases/vapours

SECTION 11: Toxicological information

. 11.1 Information on toxicological effects

. Acute toxicity:

. LD/LC50 values relevant for classification:

123-30-8 4-aminophenol

Oral | LD50 | 375 mg/kg (rat)

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.

. CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Muta. 2

SECTION 12: Ecological information**. 12.1 Toxicity****. Aquatic toxicity:****123-30-8 4-aminophenol**

EC50 48h: 0.24 mg/l (daphnia magna (Großer Wasserfloh))

LC50 48h: 1.2 mg/L (Oncorhynchus mykiss)

1310-58-3 potassium hydroxide

LC50 96h: 80 mg/L (fish (acute toxicity study))

. 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.**. Ecotoxicological effects:****. Remark:** Toxic for fish**. Additional ecological information:****. 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.

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.

. 12.5 Results of PBT and vPvB assessment**. PBT:** Not applicable.**. vPvB:** Not applicable.**. 12.6 Other adverse effects** No further relevant information available.**SECTION 13: Disposal considerations****. 13.1 Waste treatment methods****. 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.

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

SECTION 14: Transport information

. **14.1 UN-Number**. **ADR, IMDG, IATA**

UN1814

. **14.2 UN proper shipping name**. **ADR**. **IMDG**. **IATA**

1814 POTASSIUM HYDROXIDE SOLUTION
 POTASSIUM HYDROXIDE SOLUTION, MARINE
 POLLUTANT
 POTASSIUM HYDROXIDE SOLUTION

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

8 (C5) Corrosive substances.

. **Label**

8

. **IMDG**. **Class**

8 Corrosive substances.

. **Label**

8

. **IATA**. **Class**

8 Corrosive substances.

. **Label**

8

. **14.4 Packing group**. **ADR, IMDG, IATA**

II

. **14.5 Environmental hazards:**. **Marine pollutant:**

Yes

Symbol (fish and tree)

. **Special marking (ADR):**

Symbol (fish and tree)

. **14.6 Special precautions for user**

Warning: Corrosive substances.

. **Danger code (Kemler):**

80

. **EMS Number:**

F-A,S-B

. **Segregation groups**

Alkalis

. **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

. **Transport/Additional information:**. **ADR**. **Limited quantities (LQ)**

1L

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. Transport category	2
. Tunnel restriction code	E
. UN "Model Regulation":	UN1814, POTASSIUM HYDROXIDE SOLUTION, ENVIRONMENTALLY HAZARDOUS, 8, II

SECTION 15: Regulatory information

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

SECTION 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 phrases**

H290 May be corrosive to metals.
 H302 Harmful if swallowed.
 H314 Causes severe skin burns and eye damage.
 H332 Harmful if inhaled.
 H341 Suspected of causing genetic defects.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.

R20/22 Harmful by inhalation and if swallowed.

R22 Harmful if swallowed.

R35 Causes severe burns.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R68 Possible risk of irreversible effects.

. **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

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Met. Corr. 1: Corrosive to metals, Hazard Category 1

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

Muta. 2: Germ cell mutagenicity, Hazard Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2