

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 31.07.2013

Version 1

Revision: 31.07.2013

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

- **1.1 Product identifier**
- **Trade name: ADOX ATOMAL 49, part 1**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
To this day we do not have any information about the identified use at the moment. These data are available we will add these to the safety data sheet.
- **Application of the substance / the preparation**
Photochemicals
Photographic developer
Photographic activities
Consumer use
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
ADOX Fotowerke GmbH
Pieskower Str. 30 A
D-15526 Bad Saarow
Tel.: +49 (0)33631 6459-0
Fax: +49 (0)33631 6459-190
<http://www.adox.de>
- **Informing department:**
Tel.: +49 (0)33631 6459-0
Fax: +49 (0)33631 6459-190
E-mail: info@adox.de
- **1.4 Emergency telephone number:** Tel.: 0700-24112112 (CAL)

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.
Carc. 2 H351 Suspected of causing cancer.



GHS05

Eye Dam. 1 H318 Causes serious eye damage.



GHS09

Aquatic Acute 1 H400 Very toxic to aquatic life.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Skin Sens. 1 H317 May cause an allergic skin reaction.

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



Xn; Harmful

R21/22-40-68: Harmful in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. Possible risk of irreversible effects.

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 Xi; Irritant

R41: Risk of serious damage to eyes.

 Xi; Sensitising

R43: May cause sensitisation by skin contact.

 N; Dangerous for the environment

R50: Very toxic to aquatic organisms.

• **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 in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

• **2.2 Label elements**

• **Labelling according to EU guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

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



Xn Harmful

N Dangerous for the environment

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

1,4-dihydroxybenzene (hydroquinone)

N,N-Diethyl-1,4-phenylenediammoniumsulfat

• **Risk phrases:**

21/22 Harmful in contact with skin and if swallowed.

40 Limited evidence of a carcinogenic effect.

41 Risk of serious damage to eyes.

43 May cause sensitisation by skin contact.

50 Very toxic to aquatic organisms.

68 Possible risk of irreversible effects.

• **Safety phrases:**

24 Avoid contact with skin.

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.

61 Avoid release to the environment. Refer to special instructions/safety data sheets.

• **2.3 Other hazards**

• **Results of PBT and vPvB assessment**

• **PBT:** Not applicable.

• **vPvB:** Not applicable.

3 Composition/information on ingredients

• **3.2 Mixtures**

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

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· Dangerous components:

CAS: 123-31-9 EINECS: 204-617-8	1,4-dihydroxybenzene (hydroquinone)  Xn R22-40-68  Xi R41  Xi R43  N R50 Carc. Cat. 3, Muta. Cat. 3  Muta. 2, H341; Carc. 2, H351  Eye Dam. 1, H318  Aquatic Acute 1, H400  Acute Tox. 4, H302; Skin Sens. 1, H317	25-50%
CAS: 6065-27-6 EINECS: 227-995-6	N,N-Diethyl-1,4-phenyldiammoniumsulfat  Xn R21/22  Acute Tox. 4, H302; Acute Tox. 4, H312	25-50%

· SVHC

10043-35-3 | boric acid

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

4 First aid measures

· 4.1 Description of first aid measures

· General information

Instantly remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 24 hours after the accident.

· **After inhalation** Supply fresh air; consult doctor in case of symptoms.

· **After skin contact** Instantly wash with water and soap and rinse thoroughly.

· After eye contact

Rinse opened eye for several minutes under running water (> 15 min). Then consult doctor.

· After swallowing

Rinse out mouth and then drink plenty of water.

Induce vomiting and call for medical help.

· 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 Firefighting measures

· 5.1 Extinguishing media

· Suitable extinguishing agents

CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

· **For safety reasons unsuitable extinguishing agents** Water with a full water jet.

· 5.2 Special hazards arising from the substance or mixture

Can be released in case of fire

Carbon monoxide

Nitrogen oxides (NO_x)

· 5.3 Advice for firefighters

· Protective equipment:

Do not inhale explosion gases or combustion gases.

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Wear self-contained breathing apparatus.

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective clothing.

Avoid causing dust.

- **6.2 Environmental precautions:**

Inform respective authorities in case product reaches water or sewage system.

Do not allow to enter drainage system, surface or ground water.

- **6.3 Methods and material for containment and cleaning up:**

Dispose of contaminated material as waste according to item 13.

- **6.4 Reference to other sections** See Section 8 for information on personal protection equipment.

7 Handling and storage

- **7.1 Precautions for safe handling**

Open and handle container with care.

Prevent formation of dust.

- **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 containers:** No special requirements.

- **Information about storage in one common storage facility:**

Keep away from foodstuffs, beverages and food.

- **Further information about storage conditions:**

Store in cool, dry conditions in well sealed containers.

- **Storage class** LGK 13

- **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 section 7.

- **8.1 Control parameters**

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

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

MEL Long-term value: 0.5 mg/m³OES Short-term value: 4 mg/m³Long-term value: 2 mg/m³

CHAN, ILV

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

- **8.2 Exposure controls**

- **Personal protective equipment**

- **General protective and hygienic measures**

The usual precautionary measures should be adhered to general rules for handling chemicals.

Keep away from foodstuffs, beverages and food.

Take off immediately all contaminated clothing.

Wash hands during breaks and at the end of the work.

Avoid contact with the eyes and skin.

Do not eat, drink or smoke while working.

- **Breathing equipment:** Not required.

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- **Protection of hands:**
Protective gloves.
The protective gloves to be used must comply with the specifications of the EC directive 89/686/EEC and the resultant standard EN 374.
This recommendation applies only to the product stated in the Safety Data Sheet and supplied by us as well as to the purpose specified by us.
Only use chemical-protective gloves with CE-labelling of category III.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
Nitrile rubber, NBR
Butyl rubber, BR
Fluorocarbon rubber (Viton)
Chloroprene rubber, CR
Recommended thickness of the material: ≥ 0.5 mm
- **Penetration time of glove material**
Value for permeation: Level ≤ 6 (480 min)
The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Synthetic gloves
Value for permeation: Level:
 ≥ 3 (60 min)
- **Not suitable are gloves made of the following materials:** Natural rubber, NR
- **Eye protection:** Tightly sealed safety glasses.
- **Body protection:** Protective work clothing.

9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Solid.
Colour:	Whitish
Odour:	Odourless

· Change in condition

Melting point/Melting range:	> 170 °C
Boiling point/Boiling range:	Not determined

· **Flash point:** Not applicable

· **Ignition temperature:** 515 °C

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

· **Danger of explosion:** Product is not explosive.

· **Density** Not determined

· Solubility in / Miscibility with

Water at 20 °C: ~ 50 g/l

· Solvent content:

Solids content: 100.0 %

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- **9.2 Other information** 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** No dangerous reactions known
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known

11 Toxicological information

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

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

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

Oral	LD50	320 mg/kg (rat)
Dermal	LD50	>900 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** Sensitization possible by skin contact.
- **Subacute to chronic toxicity:**
Limited evidence of a carcinogenic effect.
Possible risk of irreversible effects.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
Harmful
Irritant

Hydroquinone has been included in the German "TRGS 905" (Technical Rules for Dangerous Substances/Index of carcinogen and mutagen substances or substances dangerous to reproductive systems), and has been classified as "Category 3" of carcinogen and mutagen substances (3 = category of lowest dangerousness). The according EU committees have not yet evaluated this classification.

12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** Not determined
- **12.2 Persistence and degradability** Not determined
- **12.3 Bioaccumulative potential** Not determined
- **Behaviour in environmental systems:** Not determined
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
HYDROQUINONE
toxicity to fish (LC50): 0,044 mg/l/96 h (Pimephales promelas)

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toxicity to daphnia (EC50): 0,29 mg/l/48 h (Daphnia magna)
 toxicity to algae (IC50) 0,335 mg/l/72 h (Selenastrum capricornutum)

- **Remark:** Very toxic for fish

- **Additional ecological information:**

- **General notes:**

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

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

- **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.

Must be specially treated under adherence to official regulations.

- **European waste catalogue**

09 01 01	water-based developer and activator solutions
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- **Uncleaned packagings:**

- **Recommendation:**

Non contaminated packagings can be used for recycling.

Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.

14 Transport information

- **14.1 UN-Number**

- **ADR, IMDG, IATA**

UN 3077

- **14.2 UN proper shipping name**

- **ADR**

3077 ENVIRONMENTALLY HAZARDOUS
 SUBSTANCE, SOLID, N.O.S. (HYDROQUINONE)
 ENVIRONMENTALLY HAZARDOUS
 SUBSTANCE, SOLID, N.O.S. (hydroquinone)

- **IMDG, IATA**

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

- **ADR, IMDG, IATA**



- **Class**

9 Miscellaneous dangerous substances and articles.

- **Label**

9

- **14.4 Packing group**

- **ADR, IMDG, IATA**

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<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: · Special marking (ADR): · Special marking (IATA): 	<ul style="list-style-type: none"> Symbol (fish and tree) Symbol (fish and tree) Symbol (fish and tree)
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Kemler Number: · EMS Number: 	<ul style="list-style-type: none"> Warning: Miscellaneous dangerous substances and articles. 90 F-A,S-F
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	<ul style="list-style-type: none"> Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Transport category · Tunnel restriction code · Remarks: 	<ul style="list-style-type: none"> 5 kg 3 E "Limited quantity" according to chapter 3.4 ADR, if carried in combination packagings with not more than 5 kgs per inner packaging and not more than 30 kgs per package.
<ul style="list-style-type: none"> · IMDG · Remarks: 	<ul style="list-style-type: none"> "Limited quantity" according to chapter 3.4 IMDG, if carried in combination packagings with not more than 5 kg per inner packaging and not more than 30 kg per package
<ul style="list-style-type: none"> · IATA · Remarks: 	<ul style="list-style-type: none"> Packing Instruction PAX/CAO 911
<ul style="list-style-type: none"> · UN "Model Regulation": 	<ul style="list-style-type: none"> UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1,4-dihydroxybenzene (hydroquinone)), 9, III

15 Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:**
Employment restrictions concerning pregnant and lactating women must be observed.

Class	Share in %
I	80.0

- **Water hazard class:** Water danger class 3 (Self-assessment): highly water-endangering.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
H302 Harmful if swallowed.

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- H312 Harmful in contact with skin.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H341 Suspected of causing genetic defects.
- H351 Suspected of causing cancer.
- H400 Very toxic to aquatic life.

R21/22 Harmful in contact with skin and if swallowed.

R22 Harmful if swallowed.

R40 Limited evidence of a carcinogenic effect.

R41 Risk of serious damage to eyes.

R43 May cause sensitisation by skin contact.

R50 Very toxic to aquatic organisms.

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

• Sources

applicable EEC directives:

- 1999/45

- 1907/2006

- 1272/2008

Internal physical tests, MSDS of the ingredients,

Information system on hazardous substances of the German Social Accident Insurance

(GESTIS-database on hazardous substances), <http://www.dguv.de/ifa/en/gestis/stoffdb/index.jsp>

GB