

# Safety data sheet

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

Printing date 26.05.2011


Version 3

Revision: 26.05.2011

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

- **Product identifier**
- **Trade name: Röntgen-Rapid-Developer part 1**
- **Article number:** 00017, 00018, 00019, 00021, 00022, 03022
- **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  
Developer for X-ray films  
Reserved for industrial and professional use.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
ADEFO-CHEMIE GmbH  
Justus-von-Liebig-Str. 24-26  
D-63128 Dietzenbach  
Tel.: +49 6074 84239-0  
Fax: +49 6074 84239-63  
E-Mail: service@adefo-chemie.de  
www.adefo-chemie.de
- **Informing department:**  
Tel.: +49 6074 84239-0  
Fax: +49 6074 84239-63  
E-Mail: kr@calbe-chemie.de
- **Emergency telephone number:** Tel.: 0700-24112112 (CAL)

### 2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
GHS07 exclamation mark  
Eye Irrit. 2 H319 Causes serious eye irritation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Xi; Irritant  
R36: Irritating to eyes.
- **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.
- **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:**  
 Xi Irritant
- **Risk phrases:**  
36 Irritating to eyes.

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- **Safety phrases:**  
22 Do not breathe dust.  
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
60 This material and its container must be disposed of as hazardous waste.
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with harmless additions.

- **Dangerous components:**

CAS: 497-19-8 EINECS: 207-838-8	sodium carbonate Xi R36 Eye Irrit. 2, H319	25-50%
CAS: 12179-04-3 EINECS: 215-540-4	disodium tetraborate pentahydrate T R60-61 Repr. 1B, H360	5.0-10%

- **SVHC**

12179-04-3	disodium tetraborate pentahydrate
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- **Additional information** For the wording of the listed risk phrases refer to section 16.

## 4 First aid measures

- **Description of first aid measures**
- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- **After eye contact**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
- **After swallowing**  
Rinse out mouth and then drink plenty of water.  
Induce vomiting.  
A person vomiting while lying on their back should be turned onto their side.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed** No known symptoms to date.

## 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**  
CO<sub>2</sub>, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.  
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents**  
Water with a full water jet.  
None

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- **Special hazards arising from the substance or mixture**

Can be released in case of fire

Carbon monoxide (CO)

Carbon dioxide

Sulphur oxides (SO<sub>x</sub>)

- **Advice for firefighters**

- **Protective equipment:**

Do not inhale explosion gases or combustion gases.

At formation of toxic gases:

Put on breathing apparatus.

- **Additional information** The product is not flammable

## 6 Accidental release measures

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

Wear protective clothing.

Avoid causing dust.

- **Environmental precautions:** Do not allow to enter drainage system, surface or ground water.

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

Collect mechanically.

Dispose of contaminated material as waste according to item 13.

- **Reference to other sections**

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

## 7 Handling and storage

- **Handling**

- **Precautions for safe handling** Wear protective clothing.

- **Information about protection against explosions and fires:**

No special measures required.

The product is not flammable

- **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.

- **Recommended storage temperature:** 5-30 °C

- **Storage class**

LGK 13

(German Technical Rule for Hazardous Substance – TRGS 510)

## 8 Exposure controls/personal protection

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

- **Control parameters**

- **Components 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.

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- **Additional information:** The lists that were valid during the compilation were used as basis.
- **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.  
Do not eat, drink or smoke while working.  
Wash hands during breaks and at the end of the work.  
Avoid contact with the eyes and skin.
- **Breathing equipment:** Not necessary if room is well-ventilated.
- **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.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**

	Thickness (mm)	Breakthrough time (min)
Nitril rubber	0,38	> 480
Neoprene	0,65	> 240
Butyl rubber	0,36	> 480

Avoid natural rubber gloves.
- **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)
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Solid.
Colour:	Whitish
Odour:	Not characteristic
- **pH-value (100 g/l) at 25 °C:** 12.0
- **Change in condition**

**Melting point/Melting range:** Not determined  
**Boiling point/Boiling range:** Not determined
- **Flash point:** Not applicable
- **Self-inflammability:** Product is not selfigniting.
- **Danger of explosion:** Product is not explosive.

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- |   |                |
|---|----------------|
| · <b>Critical values for explosion:</b>   |                |
| <b>Oxidizing properties</b>               | None           |
| · <b>Vapour pressure:</b>                 | Not applicable |
| · <b>Density</b>                          | Not applicable |
| · <b>Solubility in / Miscibility with</b> |                |
| <b>Water at 20 °C:</b>                    | 200 g/l        |
| · <b>Viscosity:</b>                       |                |
| <b>dynamic:</b>                           | Not applicable |
| <b>kinematic:</b>                         | Not applicable |
| · <b>Solvent content:</b>                 |                |
| <b>Organic solvents:</b>                  | 0.0 %          |
| <b>Water:</b>                             | 0.0 %          |
| · <b>Solids content:</b>                  | 100.0 %        |

### 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Reacts with strong acids
- **Hazardous decomposition products:** No dangerous decomposition products known

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritant effect.
- **Sensitization:** No sensitizing effect known.
- **Additional toxicological information:**  
This statement was deduced from the properties of the single components.  
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:  
Irritant

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** Not determined
- **Persistence and degradability** Not determined
- **Behaviour in environmental systems:** Not determined
- **Ecotoxicological effects:** Not determined
- **Behaviour in sewage processing plants:** Not determined

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

At present there are no ecotoxicological assessments.

Water hazard class 1 (German Regulation) (Self-assessment): Weakly water-endangering.

The product does not contain organically bounded halogens (AOX-free).

**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

### 13 Disposal considerations

**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

**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

**Land transport ADR/RID (cross-border)****ADR/RID-GGVS/E Class:** -**Maritime transport IMDG:****IMDG Class:** -**Air transport ICAO-TI and IATA-DGR:****ICAO/IATA Class:** -**UN "Model Regulation":** -**Special precautions for user** Not applicable.**Transport/Additional information:** Not dangerous according to the above specifications.

### 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Water hazard class:** Water hazard class 1 (Self-assessment): weakly water-endangering.**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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### 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**

H319 Causes serious eye irritation.

H360 May damage fertility or the unborn child.

R36 Irritating to eyes.

R60 May impair fertility.

R61 May cause harm to the unborn child.

- **Recommended restriction of use** No public product, only for commercial use

- **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

- **Sources**

applicable EEC directives:

- 67/548

- 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>

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

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- **Product identifier**
- **Trade name: Röntgen-Rapid-Developer part 2**
- **Article number:** 00017, 00018, 00019, 00021, 00022, 03022
- **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  
Reserved for industrial and professional use.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
ADEFO-CHEMIE GmbH  
Justus-von-Liebig-Str. 24-26  
D-63128 Dietzenbach  
Tel.: +49 6074 84239-0  
Fax: +49 6074 84239-63  
E-Mail: service@adefo-chemie.de  
www.adefo-chemie.de
- **Informing department:**  
Tel.: +49 6074 84239-0  
Fax: +49 6074 84239-63  
E-Mail: kr@calbe-chemie.de
- **Emergency telephone number:** Tel.: 0700-24112112 (CAL)

## 2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
GHS08 health hazard  
Muta. 2                      H341 Suspected of causing genetic defects.  
Carc. 2                      H351 Suspected of causing cancer.  
GHS05 corrosion  
Eye Dam. 1                H318 Causes serious eye damage.  
GHS09 environment  
Aquatic Acute 1        H400 Very toxic to aquatic life.  
GHS07 exclamation mark  
Acute Tox. 4                H302 Harmful if swallowed.  
Skin Sens. 1                H317 May cause an allergic skin reaction.  
Aquatic Chronic 3        H412 Harmful to aquatic life with long lasting effects.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Xn; Harmful  
R22-40-68:        Harmful if swallowed. Limited evidence of a carcinogenic effect. Possible risk of irreversible effects.  
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.

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- **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.

---

- **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)

- **Risk phrases:**

22 Harmful 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.

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

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

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

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

- **Dangerous components:**

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CAS: 123-31-9 EINECS: 204-617-8	1,4-dihydroxybenzene (hydroquinone) Xn R22-40-68 Xi R41 Xi R43 N R50 Muta. 2, H341; Carc. 2, H351 Eye Dam. 1, H318 Aquatic Acute 1, H400 Acute Tox. 4, H302; Skin Sens. 1, H317	75-100%
CAS: 92-43-3 EINECS: 202-155-1	1-phenyl-3-pyrazolidone Xn R22 N R51/53 Aquatic Chronic 2, H411 Acute Tox. 4, H302	5.0-10%
CAS: 7681-57-4 EINECS: 231-673-0	disodium disulphite Xn R22 Xi R41 R31 Eye Dam. 1, H318 Acute Tox. 4, H302	2.0-5.0%

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

## 4 First aid measures

### • Description of first aid measures

### • General information

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

Instantly remove any clothing soiled by the product.

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

• **After skin contact** Clean with water and soap. If possible, also wash with polyethylene glycol 400.

### • 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.

A person vomiting while lying on their back should be turned onto their side.

### • Information for doctor

• **Most important symptoms and effects, both acute and delayed** No known symptoms to date.

## 5 Firefighting measures

### • Extinguishing media

### • Suitable extinguishing agents

CO<sub>2</sub>, 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.

### • Special hazards arising from the substance or mixture

Can be released in case of fire

Carbon monoxide (CO)

Sulphur oxides (SO<sub>x</sub>)

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- **Advice for firefighters**
- **Protective equipment:**  
Do not inhale explosion gases or combustion gases.  
At formation of toxic gases:  
Put on breathing apparatus.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective clothing.
- **Environmental precautions:** Do not allow to enter drainage system, surface or ground water.
- **Methods and material for containment and cleaning up:**  
Dispose of contaminated material as waste according to item 13.
- **Reference to other sections**  
See Section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

### 7 Handling and storage

- **Handling**
- **Precautions for safe handling** Open and handle container with care.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** Store only in the original container.
- **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.
- **Recommended storage temperature:** 5-30 °C
- **Storage class**  
LGK 13  
(German Technical Rule for Hazardous Substance – TRGS 510)

### 8 Exposure controls/personal protection

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

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

**123-31-9 1,4-dihydroxybenzene (hydroquinone)**WEL Long-term value: 0.5 mg/m<sup>3</sup>**7681-57-4 disodium disulphite**WEL Long-term value: 5 mg/m<sup>3</sup>

- **Additional information:** The lists that were valid during the compilation were used as basis.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**  
Keep away from foodstuffs, beverages and food.  
Do not eat, drink or smoke while working.

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Clean skin thoroughly immediately after handling the product.

Take off immediately all contaminated clothing.

Use skin protection cream for preventive skin protection.

Avoid contact with the eyes.

• **Breathing equipment:** Not necessary if room is well-ventilated.

• **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**

	Thickness (mm)	Breakthrough time (min)
Nitril rubber	0,38	> 480
Neoprene	0,65	> 240
Butyl rubber	0,36	> 480

Avoid natural rubber gloves.

• **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)

• **Eye protection:** Tightly sealed safety glasses.

• **Body protection:** Protective work clothing.

## 9 Physical and chemical properties

• **Information on basic physical and chemical properties**

• **General Information**

• **Appearance:**

Form: Solid.

Colour: Whitish

• **Odour:** Not characteristic

• **Change in condition**

Melting point/Melting range: Not determined

Boiling point/Boiling range: Not determined

• **Flash point:** Not applicable

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

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

• **Critical values for explosion:**

Oxidizing properties: None

• **Density** Not determined

• **Solubility in / Miscibility with**

Water at 20 °C: 50 g/l

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- |                           |                |
|---------------------------|----------------|
| · <b>Viscosity:</b>       |                |
| <b>dynamic:</b>           | Not determined |
| <b>kinematic:</b>         | Not determined |
| · <b>Solvent content:</b> |                |
| <b>Solids content:</b>    | 100 %          |

### 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions**  
Reacts with strong acids and alkali  
Reacts with oxidizing agents
- **Hazardous decomposition products:** No dangerous decomposition products known

### 11 Toxicological information

- **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.
- **Additional toxicological information:**  
This statement was deduced from the properties of the single components.  
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  
  
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.
- **Sensitisation** May cause sensitisation by skin contact.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**  
Limited evidence of a carcinogenic effect.  
Possible risk of irreversible effects.

### 12 Ecological information

- **Toxicity**
- **Acquatic toxicity:** Not determined

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- **Persistence and degradability** Not determined
- **Behaviour in environmental systems:** Not determined
- **Bioaccumulative potential** Not determined
- **Ecotoxicological effects:**  
HYDROQUINONE  
toxicity to fish (LC50): 0,044 mg/l/96 h (Pimephales promelas)  
toxicity to daphnia (EC50): 0,29 mg/l/48 h (Daphnia magna)  
toxicity to algae (IC50) 0,335 mg/l/72 h (Selenastrum capricornutum)  
1-phenylpyrazolidi-3-one:  
toxicity to fish (LC50): 1-10 mg/l/96 h (Pimephales promelas)  
toxicity to daphnia (EC50): 10 mg/l/24 h (Daphnia magna)
- **Behaviour in sewage processing plants:** Not determined
- **Additional ecological information:**
- **General notes:**  
At present there are no ecotoxicological assessments.  
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.  
Danger to drinking water if even small quantities leak into soil.  
Also poisonous for fish and plankton in water bodies.  
Very toxic for aquatic organisms  
The product does not contain organically bounded halogens (AOX-free).
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 13 Disposal considerations

- **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.

• <b>European waste catalogue</b>	
09 01 01*	water-based developer and activator solutions

- **Uncleaned packagings:**
- **Recommendation:**  
Non contaminated packagings can be used for recycling.  
Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

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## 14 Transport information

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



- **ADR/RID-GGVS/E Class:** 9 Miscellaneous dangerous substances and articles.
- **Kemler Number:** 90
- **UN-Number:** UN 3077
- **Packaging group:** III
- **Label** 9
- **Special marking:** Symbol (fish and tree)
- **UN proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1,4-dihydroxybenzene (hydroquinone), 1-phenyl-3-pyrazolidone)
- **Limited quantities (LQ)** LQ27
- **Tunnel restriction code** E
- **Remarks:** "Limited quantity" according to chapter 3.4 ADR

### Maritime transport IMDG:



- **IMDG Class:** 9
- **UN Number:** UN 3077
- **Label** 9
- **Packaging group:** III
- **EMS Number:** F-A,S-F
- **Marine pollutant:** Yes
- **Correct technical name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Hydroquinone, 1-Phenyl-3-pyrazolidinone)
- **Remarks:** "Limited quantity" according to chapter 3.4 IMDG

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



- **ICAO/IATA Class:** 9
- **UN/ID Number:** UN 3077
- **Label** 9
- **Special marking:** Symbol (fish and tree)
- **Packaging group:** III
- **Correct technical name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Hydroquinone, 1-Phenyl-3-pyrazolidinone)
- **Remarks:** Packing Instruction PAX/CAO 956

- **UN "Model Regulation":** UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III
- **Special precautions for user** Warning: Miscellaneous dangerous substances and articles.

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### 15 Regulatory information

- **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	90.4

- **Water hazard class:** Water danger class 3 (Self-assessment): highly water-endangering.
- **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.  
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.  
H411 Toxic to aquatic life with long lasting effects.

R22 Harmful if swallowed.  
R31 Contact with acids liberates toxic gas.  
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.  
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R68 Possible risk of irreversible effects.

- **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

- **Sources**

applicable EEC directives:  
- 67/548  
- 1999/45  
- 1907/2006  
- 1272/2008

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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>

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

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