

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 07.05.2015

Version 4

Revision: 07.05.2015

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


- **1.1 Product identifier**
- **Trade name: Röntgen-Rapid-Developer part 1**

- **Article number:** 00017, 00018, 00019, 00021, 00022, 03022
- **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 mixture**
Photochemicals
Developer for X-ray films
Reserved for industrial and professional use.
- **1.3 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
- **1.4 Emergency telephone number:** Tel.: 0700-24112112 (CAL)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
 - **Classification according to Regulation (EC) No 1272/2008**
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.

 - **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**
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GHS07
- **Signal word** Warning
 - **Hazard statements**
H319 Causes serious eye irritation.

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- **Precautionary statements**
 - P280 Wear eye protection / face protection.
 - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P337+P313 If eye irritation persists: Get medical advice/attention.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

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

- **Dangerous components:**

CAS: 497-19-8 EINECS: 207-838-8 Index number: 011-005-00-2 Reg.nr.: 01-2119485498-19-xxxx	sodium carbonate  Xi R36  Eye Irrit. 2, H319	25-50%
CAS: 12179-04-3 EINECS: 215-540-4 Index number: 005-011-02-9	disodium tetraborate pentahydrate  T Repr. Cat. 2 R60-61  Repr. 1B, H360FD	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.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information**
 Personal protection for the First Aider.
 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.
- **4.2 Most important symptoms and effects, both acute and delayed**
 No known symptoms to date.
- **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, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

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Use fire fighting measures that suit the environment.

• For safety reasons unsuitable extinguishing agents

Water with a full water jet.

None

• 5.2 Special hazards arising from the substance or mixture

Can be released in case of fire

Carbon monoxide

Carbon dioxide

Sulphur oxides (SO_x)

• 5.3 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**SECTION 6: Accidental release measures****• 6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective clothing.

Avoid causing dust.

• 6.2 Environmental precautions: Do not allow to enter drainage system, surface or ground water.**• 6.3 Methods and material for containment and cleaning up:**

Collect mechanically.

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.

See Section 13 for information on disposal.

SECTION 7: Handling and storage**• 7.1 Precautions for safe handling** Wear protective clothing.**• Information about protection against explosions and fires:**

No special measures required.

The product is not flammable

• 7.2 Conditions for safe storage, including any incompatibilities**• Storage****• Requirements to be met by storerooms and containers:** Keep container tightly sealed.**• 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: 5-25 °C**• Storage class**

LGK 13

(German Technical Rule for Hazardous Substance – TRGS 510)

• 7.3 Specific end use(s) No further relevant information available.**SECTION 8: Exposure controls/personal protection****• Additional information about design of technical systems:** No further data; see section 7.

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- **8.1 Control parameters**
- **Components with limit values that require monitoring at the workplace:**
- **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.
 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:**
 Avoid direct contact with the chemical/ the product/ the preparation by organisational measures.
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

- **9.1 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.

- **Critical values for explosion:**

Oxidising properties	None
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- **Vapour pressure:** Not applicable

- **Density** Not applicable

- **Solubility in / Miscibility with**

Water at 20 °C:	200 g/l
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- **Viscosity:**

dynamic:	Not applicable
kinematic:	Not applicable

- **Solvent content:**

Organic solvents:	0.0 %
Water:	0.0 %

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Solids content: 100.0 %· **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:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with strong acids
- **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

SECTION 11: Toxicological information

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

· **LD/LC50 values that are relevant for classification:****497-19-8 sodium carbonate**

Oral LD50 4000 mg/kg (rat)

12179-04-3 disodium tetraborate pentahydrate

Oral LD50 2660 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** Irritant effect.
- **Respiratory or skin sensitisation** 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 Mixtures as issued in the latest version:
Irritant

SECTION 12: Ecological information

- **12.1 Toxicity**

· **Aquatic toxicity:****497-19-8 sodium carbonate**

LC50/96 h 300 mg/l (Lepomis macrochirus)

12179-04-3 disodium tetraborate pentahydrate

EC50/96 h 15.4 mg/l (Algae)

LC50/48 h 141 mg/L (Daphnia magna)

- **12.2 Persistence and degradability** Not determined
- **12.3 Bioaccumulative potential** No further relevant information available.
- **Behaviour in environmental systems:** Not determined
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxic effects:** No further relevant information available.

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- **Behaviour in sewage processing plants:** Not determined
- **Additional ecological information:**
- **General notes:**
At present there are no ecotoxicological assessments.
This statement was deduced from the properties of the single components.
Water hazard class 1 (German Regulation) (Self-assessment): Weakly water-endangering.
- **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 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.

SECTION 14: Transport information

- | | |
|---|--|
| · 14.1 UN-Number
· ADR, ADN, IMDG, IATA | Void |
| · 14.2 UN proper shipping name
· ADR
· ADN, IMDG, IATA | Void
Void |
| · 14.3 Transport hazard class(es)
· ADR, ADN, IMDG, IATA
· Class | Void |
| · 14.4 Packing group
· ADR, IMDG, IATA | Void |
| · 14.5 Environmental hazards: | Not applicable. |
| · 14.6 Special precautions for user | Not applicable. |
| · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | Not dangerous according to the above specifications. |
| · UN "Model Regulation": | - |

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SECTION 15: Regulatory information

- **15.1 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.
- **Other regulations, limitations and prohibitive regulations**

Substances of very high concern (SVHC) according to REACH, Article 57

12179-04-3 | disodium tetraborate pentahydrate

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

SECTION 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.

H360FD May damage fertility. May damage 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:

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 Organisation

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 Harmonised 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

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Repr. 1B: Reproductive toxicity, Hazard Category 1B

Sources

applicable EEC directives:

- 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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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name: Röntgen-Rapid-Developer part 2****Article number:** 00017, 00018, 00019, 00021, 00022, 03022**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 mixture

Photochemicals
Photographic developer
Reserved for industrial and professional use.

1.3 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

1.4 Emergency telephone number: Tel.: 0700-24112112 (CAL)**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Acute Tox. 4 H302 Harmful if swallowed.
Eye Dam. 1 H318 Causes serious eye damage.
Skin Sens. 1 H317 May cause an allergic skin reaction.
Muta. 2 H341 Suspected of causing genetic defects.
Carc. 2 H351 Suspected of causing cancer.
Aquatic Acute 1 H400 Very toxic to aquatic life.
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.

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.

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- **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 Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

- **Hazard pictograms**



GHS05 GHS07 GHS08 GHS09

- **Signal word** Danger

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

1,4-dihydroxybenzene (hydroquinone)

1-phenyl-3-pyrazolidone

disodium disulphite

- **Hazard statements**

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H351 Suspected of causing cancer.

H400 Very toxic to aquatic life.

H412 Harmful to aquatic life with long lasting effects.

- **Precautionary statements**

P280 Wear protective gloves / eye protection.

P273 Avoid release to the environment.

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/doctor.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P501 Dispose of contents/container in accordance with local/regional/national/international 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 Mixtures**

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

- **Dangerous components:**

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








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CAS: 123-31-9 EINECS: 204-617-8 Index number: 604-005-00-4 Reg.nr.: 01-2119524016-51-xxxx	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	75-100%
CAS: 92-43-3 EINECS: 202-155-1 Index number: 606-022-00-2	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 Index number: 016-063-00-2 Reg.nr.: 01-2119531326-45-xxxx	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.

SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· **General information**

Personal protection for the First Aider.

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**
If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious).
Drink plenty of water.
Induce vomiting.
A person vomiting while lying on their back should be turned onto their side.
- **4.2 Most important symptoms and effects, both acute and delayed**
No known symptoms to date.
- **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, 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.

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· 5.2 Special hazards arising from the substance or mixture

Can be released in case of fire

Carbon monoxide

Sulphur oxides (SO_x)**· 5.3 Advice for firefighters****· Protective equipment:**

Do not inhale explosion gases or combustion gases.

At formation of toxic gases:

Put on breathing apparatus.

SECTION 6: Accidental release measures**· 6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective clothing.

· 6.2 Environmental precautions: Do not allow to enter drainage system, surface or ground water.**· 6.3 Methods and material for containment and cleaning up:**

Collect mechanically.

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.

See Section 13 for information on disposal.

SECTION 7: Handling and storage**· 7.1 Precautions for safe handling**

Do not handle until all safety precautions have been read and understood.

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:** 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: 5-25 °C**· Storage class**

LGK 13

(German Technical Rule for Hazardous Substance – TRGS 510)

· 7.3 Specific end use(s) No further relevant information available.**SECTION 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)**WEL Long-term value: 0.5 mg/m³**7681-57-4 disodium disulphite**WEL Long-term value: 5 mg/m³

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- **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**
 - Keep away from foodstuffs, beverages and food.
 - Do not eat, drink or smoke while working.
 - Clean skin thoroughly immediately after handling the product.
 - Take off immediately all contaminated clothing.
 - Wash contaminated clothing before reuse.
 - 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.

SECTION 9: Physical and chemical properties**9.1 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.

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- | | |
|---|--|
| · Critical values for explosion: | |
| Oxidising properties | None |
| · Density | Not determined |
| · Solubility in / Miscibility with | |
| Water at 20 °C: | 50 g/l |
| · Viscosity: | |
| dynamic: | Not determined |
| kinematic: | Not determined |
| · Solvent content: | |
| Solids content: | 100 % |
| · 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:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Reacts with strong acids and alkali
Reacts with oxidizing agents
- **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

SECTION 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)

92-43-3 1-phenyl-3-pyrazolidone

Oral	LD50	200 mg/kg (rat)
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7681-57-4 disodium disulphite

Oral	LD50	3200 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** 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 Mixtures 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

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(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.
 Muta. 2, Carc. 2

SECTION 12: Ecological information

· 12.1 Toxicity

· **Aquatic toxicity:**

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

EC50/48 h	0.29 mg/l (Daphnia magna)
IC50/72 h	0.335 mg/l (Selenastrum capricornutum)
LC50/96 h	0.044 mg/l (Pimephales promelas)

92-43-3 1-phenyl-3-pyrazolidone

LC50/96 h	1-10 mg/l (Pimephales promelas)
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7681-57-4 disodium disulphite

EC50/48 h	89 mg/l (Daphnia magna)
LC50/96 h	32 mg/l (Lepomis macrochirus)

- **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:** No further relevant information available.
- **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
- **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 of together with household garbage. Do not allow product to reach sewage system.
 Must be specially treated under adherence to official regulations.

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· 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.

· Recommended cleaning agent: Water, if necessary with cleaning agent.

SECTION 14: Transport information

· 14.1 UN-Number
· ADR, IMDG, IATA

UN 3077

· 14.2 UN proper shipping name
· ADR

 ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S. (1,4-
dihydroxybenzene (hydroquinone), 1-phenyl-3-
pyrazolidone)

· IMDG, IATA

 ENVIRONMENTALLY HAZARDOUS
SUBSTANCE, SOLID, N.O.S. (Hydroquinone, 1-
Phenyl-3-pyrazolidinone)

· 14.3 Transport hazard class(es)
· ADR, IATA

· Class

 9 Miscellaneous dangerous substances and
articles.

· IMDG

· Class

 9 Miscellaneous dangerous substances and
articles.

· 14.4 Packing group
· ADR, IMDG, IATA

III

· 14.5 Environmental hazards:
· Special marking (ADR):

Symbol (fish and tree)

· Special marking (IATA):

Symbol (fish and tree)

· 14.6 Special precautions for user

 Warning: Miscellaneous dangerous substances and
articles.

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

Not applicable.

· Transport/Additional information:

 These substances when transported in single or
combination packagings containing a net quantity
per single or inner packaging of 5 l or less for
liquids or having a net mass of 5 kg or less for
solids, are not subject to any other provisions of

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·	these Regulations provided the packagings meet the general. See the following notes.
· ADR	Goods are not subject to the provisions in accordance with the special provision 375 ADR.
· IMDG	Goods are not subject to the provisions in accordance with 2.10.2.7 IMDG-Code.
· IATA	Goods are not subject to the provisions in accordance with the special provision 197 IATA-DGR.
· UN "Model Regulation":	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1,4-dihydroxybenzene (hydroquinone), 1-phenyl-3-pyrazolidone), 9, III

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **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.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 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.

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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 Organisation

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 Harmonised 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

Acute Tox. 4: Acute toxicity, Hazard Category 4

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Muta. 2: Germ cell mutagenicity, Hazard Category 2

Carc. 2: Carcinogenicity, Hazard Category 2

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

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

Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

• Sources

applicable EEC directives:

- 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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