

SAFETY DATA SHEET

Rodinal

SECTION 1: IDENTIFICATION

1.1. Product identifier

Trade name: Rodinal

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture: Photographic developer

Uses advised against: None known.

1.3. Details of the supplier of the safety data sheet

Company and address: **ADOX Fotowerke GmbH**
Pieskower Str. 30 A
15526 Bad Saarow
Deutschland
+49 (0)33631 6459-25
<https://www.adox.de>

E-mail: info@adox.de

SDS date: 6/24/2024

SDS Version: 1.0

Date of previous version: 6/24/2024 (1.0)

1.4. Emergency telephone number

Contact the poison control at 1-800-222-1222 (24/7) or use the webPOISONCONTROL® ([triage.webpoisoncontrol.org](https://www.webpoisoncontrol.org)) to get specific guidance for your case
See also section 4 "First aid measures".

SECTION 2: HAZARD(S) IDENTIFICATION

OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

2.1. Classification of the substance or mixture

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

Skin Sens. 1; H317, May cause an allergic skin reaction.

Eye Dam. 1; H318, Causes serious eye damage.

Muta. 2; H341, Suspected of causing genetic defects.

STOT RE 2; H373, May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Hazard pictogram(s):



<i>Signal word:</i>	Danger
<i>Hazard statement(s):</i>	Causes severe skin burns and eye damage. (H314) May cause an allergic skin reaction. (H317) Suspected of causing genetic defects. (H341) May cause damage to organs through prolonged or repeated exposure. (H373)
<i>Precautionary statement(s):</i>	
<i>General:</i>	If medical advice is needed, have product container or label at hand. (P101) Keep out of reach of children. (P102)
<i>Prevention:</i>	Obtain special instructions before use. (P201) Do not breathe vapour/mist. (P260) Wear eye protection/protective gloves. (P280)
<i>Response:</i>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. (P301+P330+P331) IF ON SKIN: Wash with plenty of water and soap. (P302+P352) IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. (P303+P361+P353) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338) IF exposed or concerned: Get medical advice/attention. (P308+P313) Immediately call a POISON CENTER/doctor. (P310) Get medical advice/attention if you feel unwell. (P314) If skin irritation or rash occurs: Get medical advice/attention. (P333+P313) Take off contaminated clothing and wash it before reuse. (P362+P364)
<i>Storage:</i>	Store locked up. (P405)
<i>Disposal:</i>	Dispose of contents/container in accordance with local regulation (P501)
<i>Additional labelling:</i>	Not applicable.

2.3. Other hazards

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable. This product is a mixture.

3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
4-aminophenol	CAS No.: 123-30-8	3-5%	Acute Tox. 4, H302 Skin Sens. 1, H317 Acute Tox. 4, H332 Muta. 2, H341	

			STOT RE 2, H373	
potassium hydroxide;caustic potash	CAS No.: 1310-58-3	1-3%	Met. Corr. 1, H290 Acute Tox. 4, H302 Skin Corr. 1A, H314 Skin Corr. 1B, H314 (SCL: 2.00 %) Skin Irrit. 2, H315 (SCL: 0.50 %) Eye Irrit. 2, H319 (SCL: 0.50 %)	
Potassium bromide	CAS No.: 7758-02-3	1-3%	Eye Irrit. 2, H319	

Where the concentration of an ingredient is expressed as a range the exact concentration has been withheld as a trade secret.

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

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SECTION 4: FIRST-AID MEASURES

4.1. Description of first aid measures

General information:

If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid).

Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation:

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

Skin contact:

Flush exposed area with water for a long time - at least 30 minutes. It may be necessary to flush for several hours. Use a comfortable water temperature (20-30 °C). Contact Poison Information/doctor/hospital for further advice on follow-up and treatment.

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

If skin irritation occurs: Get medical advice/attention.

Eye contact:

If in eyes: Flush eyes with plenty of water or salt water (20-30 °C) for at least 30 minutes and continue until irritation stops. Remove contact lenses. Make sure you flush under the upper and lower eyelids. Seek medical assistance immediately and continue flushing during transport.

Ingestion:

In the case of ingestion, contact a doctor immediately. If the person is conscious, give them water. DO NOT try to induce vomiting unless this is recommended by a doctor.

Hold head facing down to prevent vomit from returning to the mouth and throat. Prevent shock by keeping the injured person warm and calm. Initiate immediate resuscitation if breathing stops. If unconscious, roll the injured person into recovery position. Call an ambulance.

Burns:

Not applicable.

4.2. Most important symptoms and effects, both acute and delayed

Headache, Methaemoglobinaemia (4-aminophenol)

Tissue-damaging effects: This product contains substances with skin corrosive properties.

Inhaled vapour or aerosols may produce adverse effects to lungs, irritations and burns in the respiratory organs as well as coughing. Dermal contact and contact with the eye cause irreversible effects.

4.3. Indication of any immediate medical attention and special treatment needed

IF exposed or concerned:

Get immediate medical advice/attention.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.

Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Halogenated compounds

Sulphur oxides

Nitrogen oxides (NO_x)

Carbon oxides (CO / CO₂)

Some metal oxides

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact the Poison Help Line on 1-800-222-1222 (24/7) in order to obtain further advice.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Avoid direct contact with spilled substances.

Contaminated areas may be slippery.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc. In the event of leakage to the surroundings, contact local environmental authorities.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid direct contact with the product.

Avoid contact during pregnancy and while nursing.

Smoking, drinking and consumption of food is not allowed in the work area.

See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage material: Keep only in original packaging.

Storage temperature: 5 - 30°C

Incompatible materials: Acids

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No substances are listed with a permissible exposure limit (ref: 29 CFR 1910.1000 TABLE Z-1)

8.2. Exposure controls

Apply general control to prevent unnecessary exposure

General recommendations: Smoking, drinking and consumption of food is not allowed in the work area.

Exposure scenarios: There are no exposure scenarios implemented for this product.

Exposure limits: Occupational exposure limits have not been defined for the substances in this product.

Appropriate technical measures: Do not recirculate outlet air that contain the substances. Ensure that eyewash stations and safety showers are located within easy reach. Apply standard precautions during use of the product. Avoid inhalation of vapours.

Hygiene measures: In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.

Measures to avoid environmental Keep damming materials near the workplace. If possible,

exposure: collect spillage during work.

Individual protection measures, such as personal protective equipment

Generally: Wash contaminated clothing before reuse.
Use only protective equipment with a recognized certification mark, e.g. the UL mark.


Respiratory Equipment:

Type	Class	Colour	Standards	
Respiratory protection is not needed in the event of adequate ventilation.				


Skin protection:

Recommended	Type/Category	Standards	
No special when used as intended.	-	-	

Hand protection:

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards	
Nitrile	0,38	> 480	EN374-2, EN374-3, EN388	

Eye protection:

Type	Standards	
Safety glasses with side shields.	EN166	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour: Clear, Pink

Odour: None

Odour threshold (ppm): Testing not relevant or not possible due to the nature of the product.

pH: >13

Density (g/cm³): Testing not relevant or not possible due to the nature of the product.

Kinematic viscosity: Testing not relevant or not possible due to the nature of the product.

Particle characteristics: Does not apply to liquids.

Phase changes

Melting point (°F): Testing not relevant or not possible due to the nature of

<i>Softening point/range (°F):</i>	the product.
<i>Boiling point (°F):</i>	Does not apply to liquids.
<i>Vapour pressure:</i>	Testing not relevant or not possible due to the nature of the product.
<i>Relative vapour density:</i>	Testing not relevant or not possible due to the nature of the product.
<i>Decomposition temperature (°F):</i>	Testing not relevant or not possible due to the nature of the product.

Data on fire and explosion hazards

<i>Flash point (°F):</i>	Testing not relevant or not possible due to the nature of the product.
<i>Flammability (°F):</i>	Testing not relevant or not possible due to the nature of the product.
<i>Auto-ignition temperature (°F):</i>	Testing not relevant or not possible due to the nature of the product.
<i>Explosion limits (% v/v):</i>	Testing not relevant or not possible due to the nature of the product.

Solubility

<i>Solubility in water:</i>	Testing not relevant or not possible due to the nature of the product.
<i>n-octanol/water coefficient (LogKow):</i>	Testing not relevant or not possible due to the nature of the product.
<i>Solubility in fat (g/L):</i>	Testing not relevant or not possible due to the nature of the product.

9.2. Other information

<i>Other physical and chemical parameters:</i>	No data available.
<i>Oxidizing properties:</i>	Testing not relevant or not possible due to the nature of the product.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

The product is stable under the conditions, noted in section 7 "Handling and storage".

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Acids

10.6. Hazardous decomposition products

Thermal decomposition may produce corrosive vapours.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Causes severe skin burns and eye damage.

Serious eye damage/irritation

Causes serious eye damage.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

Suspected of causing genetic defects.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Based on available data, the classification criteria are not met.

Long term effects

Tissue-damaging effects: This product contains substances with skin corrosive properties. Inhaled vapour or aerosols may produce adverse effects to lungs, irritations and burns in the respiratory organs as well as coughing. Dermal contact and contact with the eye cause irreversible effects.

Other information

None known.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

No data available.

12.2. Persistence and degradability

Based on available data, the classification criteria are not met.

12.3. Bioaccumulative potential

Based on available data, the classification criteria are not met.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS




RCRA Hazardous waste ("P" and "U" list) (40 CFR 261)

None of the components are listed

Specific labelling

Contaminated packing

SECTION 14: TRANSPORT INFORMATION

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
DOT	UN1814	POTASSIUM HYDROXIDE SOLUTION	Transport hazard class: 8 Label: 8 Classification code: C5 	II	No	Limited quantities: 1 L Tunnel restriction code: (E) See below for additional information.
IMDG	UN1814	POTASSIUM HYDROXIDE SOLUTION	Transport hazard class: 8 Label: 8 Classification code: C5 	II	No	Limited quantities: 1 L EmS: F-A S-B See below for additional information.
IATA	UN1814	POTASSIUM HYDROXIDE SOLUTION	Transport hazard class: 8 Label: 8 Classification code: C5 	II	No	See below for additional information.

* Packing group

** Environmental hazards

Additional information

DOT / See § 172.101 Hazardous Materials Table for any information on special provisions,

requirements, or warnings in connection with transport. See § 172.602, for instructions in writing regarding mitigation of damages in relation to incidents or accidents during transport. IMDG / See section 3.2.1, for any information on special provisions, requirements, or warnings in connection with transport.

IATA / See Table 4.2 for any information on special provisions, requirements, or warnings in connection with transport.

This product is within scope of the regulations of transport of dangerous goods.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

No data available.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.2. U.S. Federal regulations

TSCA (the non-confidential portion):

4-aminophenol is listed
potassium hydroxide;caustic potash is listed
Potassium bromide is listed

Clean Air Act:

None of the components are listed

EPCRA Section 302:

None of the components are listed

EPCRA Section 304:

None of the components are listed

EPCRA section 313:

None of the components are listed

CERCLA:

potassium hydroxide;caustic potash is regulated with a Reportable Quantity (RQ) of: 1000 pounds

State regulations

California / Prop. 65:

None of the components are listed

Massachusetts / Right To Know Act:

potassium hydroxide;caustic potash is listed

New Jersey / Right To Know Act:

potassium hydroxide;caustic potash / Substance number: 1571

potassium hydroxide;caustic potash is on the Special Health Hazard Substance List

New York / Right To Know Act:

—
potassium hydroxide;caustic potash is listed
potassium hydroxide;caustic potash is regulated with a Reportable Quantity (RQ) of: 1000 pounds
potassium hydroxide;caustic potash is regulated with a Treshold Reporting Quantity (TRQ) of: 100 pounds

Pennsylvania / Right To Know Act:

—
potassium hydroxide;caustic potash is listed
potassium hydroxide;caustic potash is hazardous to the environment (E)

15.4. Restrictions for application

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must

be considered.

15.5. Demands for specific education

No specific requirements.

15.6. Additional information

If this product is sold in retail, it must be delivered with child-resistant fastening.

15.7. Chemical safety assessment

No

15.8. Sources

OSHA Hazard Communication Standard (29 CFR 1910.1200)

SECTION 16: OTHER INFORMATION

Full text of H-phrases as mentioned in section 3

H290, May be corrosive to metals.

H302, Harmful if swallowed.

H314, Causes severe skin burns and eye damage.

H315, Causes skin irritation.

H317, May cause an allergic skin reaction.

H319, Causes serious eye irritation.

H332, Harmful if inhaled.

H341, Suspected of causing genetic defects.

H373, May cause damage to organs through prolonged or repeated exposure.

The full text of identified uses as mentioned in section 1

None known.

Abbreviations and acronyms

ACGIH = American Conference of Governmental Industrial Hygienists

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

CAS = Chemical Abstracts Service

CERCLA = Comprehensive Environmental Response Compensation and Liability Act

DOT = Department of Transportation

EINECS = European Inventory of Existing Commercial chemical Substances

EPCRA = Emergency Planning and Community Right-To-Know Act

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

HCIS = Hazardous Chemical Information System

HNOC = Hazards Not Otherwise Classified

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

NFPA = National Fire Protection Association

NIOSH = National Institute for Occupational Safety and Health

OECD = Organisation for Economic Co-operation and Development

OSHA = Occupational Safety and Health Administration

PBT = Persistent, Bioaccumulative and Toxic
RCRA = Resource Conservation and Recovery Act
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SARA = Superfund Amendments and Reauthorization Act
SCL = A specific concentration limit.
STEL = Short-term exposure limits
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TSCA = The Toxic Substances Control Act
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by HCS (29 CFR 1910.1200).

The classification of the mixture in regard of skin corrosion and serious eye damage is based on the pH-criterion given by HCS (29 CFR 1910.1200).

▼ The safety data sheet is validated by

KL

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product.

Information in this safety data sheet cannot be used as a product specification.

Country-language: US-en