

Safety Data Sheet

acc. to OSHA HCS

Printing date 12/10/2021

Reviewed on 12/10/2021

1 Identification

- **Product identifier**
- **Trade name:** R-201 DEVELOPER
- **Article number:** 74961-01, 74961-10
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 2 H351 Suspected of causing cancer.



GHS05 Corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

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

- **Label elements**

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS05



GHS07



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

POTASSIUM HYDROXIDE
hydroquinone

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- **Hazard statements**

Harmful if swallowed.
 Causes severe skin burns and eye damage.
 May cause an allergic skin reaction.
 Suspected of causing genetic defects.
 Suspected of causing cancer.

- **Precautionary statements**

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not breathe dusts or mists.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Contaminated work clothing must not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.
 If swallowed: Call a poison center/doctor if you feel unwell.
 If swallowed: Rinse mouth. Do NOT induce vomiting.
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
 Immediately call a poison center/doctor.
 IF exposed or concerned: Get medical advice/attention.
 Specific treatment (see on this label).
 If skin irritation or rash occurs: Get medical advice/attention.
 Wash contaminated clothing before reuse.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

- **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 nonhazardous additions.

- **Dangerous components:**

1310-58-3	POTASSIUM HYDROXIDE	>2.5-≤10%
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123-31-9 hydroquinone

>2.5-≤10%

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Immediately call a doctor.
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

1310-58-3 POTASSIUM HYDROXIDE

0.18 mg/m³

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123-31-9	hydroquinone	3 mg/m ³
· PAC-2:		
1310-58-3	POTASSIUM HYDROXIDE	2 mg/m ³
123-31-9	hydroquinone	20 mg/m ³
· PAC-3:		
1310-58-3	POTASSIUM HYDROXIDE	54 mg/m ³
123-31-9	hydroquinone	120 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **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 receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **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 item 7.
- **Control parameters**

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

1310-58-3 POTASSIUM HYDROXIDE

REL Ceiling limit value: 2 mg/m³TLV Ceiling limit value: 2 mg/m³

123-31-9 hydroquinone

PEL Long-term value: 2 mg/m³REL Ceiling limit value: 2* mg/m³
*15-minTLV Long-term value: 1 mg/m³
DSEN, A3

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.

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· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form:	Liquid
Color:	Light beige
Odor:	Odorless
Odor threshold:	Not determined.

· **pH-value at 20 °C (68 °F):** 11

· **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	100 °C (212 °F)

· **Flash point:** 165 °C (329 °F)

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:** 515 °C (959 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower:	Not determined.
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Upper:	Not determined.
· Vapor pressure:	Not determined.
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
Solids content:	15.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **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:**

1310-58-3 POTASSIUM HYDROXIDE

Oral	LD50	273 mg/kg (rat)
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123-31-9 hydroquinone

Oral	LD50	320 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:**
Strong caustic effect.
Strong irritant with the danger of severe eye injury.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful

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Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

123-31-9 hydroquinone

3

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Ecotoxic effects:**

- **Remark:** Very toxic for fish

- **Additional ecological information:**

- **General notes:**

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA 	<p style="margin: 0;">UN1719</p>
<ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR · IMDG · IATA 	<p style="margin: 0;">Caustic alkali liquids, n.o.s. (Potassium hydroxide) 1719 CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), ENVIRONMENTALLY HAZARDOUS CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), MARINE POLLUTANT CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE)</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<div style="text-align: center;">  </div> <p style="margin: 0;">8 Corrosive substances</p>
<ul style="list-style-type: none"> · Class · Label 	<p style="margin: 0;">8</p>
<ul style="list-style-type: none"> · ADR, IMDG 	<div style="text-align: center;">  </div> <p style="margin: 0;">8 Corrosive substances</p>
<ul style="list-style-type: none"> · Class · Label 	<p style="margin: 0;">8</p>
<ul style="list-style-type: none"> · IATA 	<div style="text-align: center;">  </div> <p style="margin: 0;">8 Corrosive substances</p>
<ul style="list-style-type: none"> · Class · Label 	<p style="margin: 0;">8</p>
<ul style="list-style-type: none"> · Packing group · DOT, ADR, IMDG, IATA 	<p style="margin: 0;">II</p>
<ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: · Special marking (ADR): 	<p style="margin: 0;">Product contains environmentally hazardous substances: hydroquinone Symbol (fish and tree) Symbol (fish and tree)</p>
<ul style="list-style-type: none"> · Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Segregation Code 	<p style="margin: 0;">Warning: Corrosive substances 80 F-A,S-B Alkalis A SG22 Stow "away from" ammonium salts SG35 Stow "separated from" SGG1-acids</p>

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· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1719 CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), 8, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
- **Sara**

- **Section 355 (extremely hazardous substances):**

123-31-9	hydroquinone
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- **Section 313 (Specific toxic chemical listings):**

123-31-9	hydroquinone
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- **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

- **Hazardous Air Pollutants**

123-31-9	hydroquinone
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- **Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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· **TLV (Threshold Limit Value)**

123-31-9 hydroquinone

A3

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS05

GHS07

GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

POTASSIUM HYDROXIDE

hydroquinone

· **Hazard statements**

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

Suspected of causing cancer.

· **Precautionary statements**

Obtain special instructions before use.

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

Do not breathe dusts or mists.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing must not be allowed out of the workplace.

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

If swallowed: Call a poison center/doctor if you feel unwell.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a poison center/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

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

Wash contaminated clothing before reuse.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:**

· **Date of preparation / last revision** 12/10/2021 / -

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· Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

*OSHA: Occupational Safety **Health***

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Muta. 2: Germ cell mutagenicity – Category 2

Carc. 2: Carcinogenicity – Category 2

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1 Identification

- **Product identifier**
- **Trade name:** **R-201 DEVELOPER**
- **Article number:** 74961-01, 74961-10
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- ProSciTech Pty Ltd
11 Carlton Street, Kirwan QLD 4817 Australia
Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
Website: ems.proscitech.com
- Emgrid Australia Pty. Ltd.
P.O. Box 118
The Patch VIC 3792
Australia
Tel: 03 9752 1785
Fax: 03 9752 1784
Website: www.emgrid.com.au
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard(s) Identification

- **Classification of the substance or mixture**



GHS08 health hazard

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 2 H351 Suspected of causing cancer.



GHS05 corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

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

· **Label elements**

· **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS05 GHS07 GHS08

· **Signal word** *Danger*

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

POTASSIUM HYDROXIDE

hydroquinone

· **Hazard statements**

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

Suspected of causing cancer.

· **Precautionary statements**

Obtain special instructions before use.

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

Do not breathe dusts or mists.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing should not be allowed out of the workplace.

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

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

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

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a POISON CENTER/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

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

Wash contaminated clothing before reuse.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition and Information on Ingredients

· **Chemical characterisation:** *Mixtures*

· **Description:** *Mixture of substances listed below with nonhazardous additions.*

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· Dangerous components:

1310-58-3	POTASSIUM HYDROXIDE	>2.5-≤10%
123-31-9	hydroquinone	>2.5-≤10%

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

4 First Aid Measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

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

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:**

Call for a doctor immediately.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Fire Fighting Measures

· **Extinguishing media**

· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

· **Special hazards arising from the substance or mixture** No further relevant information available.

· **Advice for firefighters**

· **Protective equipment:** No special measures required.

6 Accidental Release Measures

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

Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

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

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralising agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

7 Handling and Storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls and personal protection

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

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

1310-58-3 POTASSIUM HYDROXIDE

WES Peak limitation: 2 mg/m³

123-31-9 hydroquinone

WES Long-term value: 2 mg/m³

- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

9 Physical and Chemical Properties

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

- **General Information**

- **Appearance:**

Form:	Liquid
Colour:	Light beige
Odour:	Odourless
Odour threshold:	Not determined.

- **pH-value at 20 °C:** 11

- **Change in condition**

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	100 °C

- **Flash point:** 165 °C

- **Flammability (solid, gas):** Not applicable.

- **Ignition temperature:** 515 °C

- **Decomposition temperature:** Not determined.

- **Auto-ignition temperature:** Product is not selfigniting.

- **Explosive properties:** Product does not present an explosion hazard.

- **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

- **Vapour pressure:** Not determined.

Density:	Not determined.
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.

- **Solubility in / Miscibility with water:** Fully miscible.

- **Partition coefficient: n-octanol/water:** Not determined.

- **Viscosity:**

Dynamic:	Not determined.
Kinematic:	Not determined.

- **Solvent content:**

VOC (EC) 0.00 %

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Solids content:	15.0 %
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Other information	No further relevant information available.
--------------------------	--

10 Stability and Reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological Information

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

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

1310-58-3 POTASSIUM HYDROXIDE

Oral	LD50	273 mg/kg (rat)
------	------	-----------------

123-31-9 hydroquinone

Oral	LD50	320 mg/kg (rat)
------	------	-----------------

- **Primary irritant effect:**
- **Skin corrosion/irritation** Strong caustic effect on skin and mucous membranes.
- **Serious eye damage/irritation**
Strong caustic effect.
Strong irritant with the danger of severe eye injury.
- **Respiratory or skin sensitisation** Sensitisation possible through skin contact.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Corrosive
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
Muta. 2, Carc. 2

12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

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- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
*Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 Must not reach sewage water or drainage ditch undiluted or unneutralised.
 Danger to drinking water if even extremely small quantities leak into the ground.
 Also poisonous for fish and plankton in water bodies.
 Very toxic for aquatic organisms*
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

- | | |
|--|--|
| <ul style="list-style-type: none"> · UN-Number · ADG, IMDG, IATA | <p style="text-align: center;">UN1719</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · ADG · IMDG · IATA | <p style="text-align: center;">1719 CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), ENVIRONMENTALLY HAZARDOUS CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), MARINE POLLUTANT CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE)</p> |
| <ul style="list-style-type: none"> · Transport hazard class(es) · ADG, IMDG | <div style="display: flex; align-items: center; justify-content: center;">  </div> <p style="text-align: center;">8 Corrosive substances.</p> |
| <ul style="list-style-type: none"> · Class · Label | <p style="text-align: center;">8</p> |

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· IATA



· **Class** 8 Corrosive substances.
 · **Label** 8

· **Packing group**
 · **ADG, IMDG, IATA** II

· **Environmental hazards:** Product contains environmentally hazardous substances:
 hydroquinone
 · **Marine pollutant:** Symbol (fish and tree)
 · **Special marking (ADG):** Symbol (fish and tree)

· **Special precautions for user** Warning: Corrosive substances.
 · **Hazard identification number (Kemler code):** 80
 · **EMS Number:** F-A,S-B
 · **Segregation groups** Alkalis
 · **Stowage Category** A
 · **Segregation Code** SG22 Stow "away from" ammonium salts
 SG35 Stow "separated from" SGG1-acids

· **Transport in bulk according to Annex II of Marpol and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **ADG**
 · **Limited quantities (LQ)** 1L
 · **Excepted quantities (EQ)** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml
 · **Transport category** 2
 · **Tunnel restriction code** E

· **IMDG**
 · **Limited quantities (LQ)** 1L
 · **Excepted quantities (EQ)** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":** UN 1719 CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), 8, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Australian Inventory of Industrial Chemicals**

All ingredients are listed.

· **Standard for the Uniform Scheduling of Medicines and Poisons**

1310-58-3	POTASSIUM HYDROXIDE	S5, S6, S10
123-31-9	hydroquinone	S2, S4, S6

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· **Australia: Priority Existing Chemicals**

None of the ingredients is listed.

· **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS05 GHS07 GHS08

· **Signal word** *Danger*

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

POTASSIUM HYDROXIDE

hydroquinone

· **Hazard statements**

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

Suspected of causing cancer.

· **Precautionary statements**

Obtain special instructions before use.

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

Do not breathe dusts or mists.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing should not be allowed out of the workplace.

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

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

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

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a POISON CENTER/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

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

Wash contaminated clothing before reuse.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **Seveso category E1** Hazardous to the Aquatic Environment

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

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

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:**

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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

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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Muta. 2: Germ cell mutagenicity – Category 2

Carc. 2: Carcinogenicity – Category 2

Safety Data Sheet

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1 Identification

- **Product identifier**
- **Trade name:** R-201 DEVELOPER
- **Article number:** 74961-01, 74961-10
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Electron Microscopy Sciences
 1560 Industry Road
 USA-Hatfield, PA 19440
 Tel: 215-412-8400 Fax: 215-412-8450
 email: info@emsdiasum.com
 www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**
 ChemTrec 1-800-424-9300 Contract CCN7661
 1-703-527-3887

2 Hazard identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Germ Cell Mutagenicity - Category 2 H341 Suspected of causing genetic defects.

Carcinogenicity – Category 2 H351 Suspected of causing cancer.



GHS05 Corrosion

Skin Corrosion - Category 1A H314 Causes severe skin burns and eye damage.

Serious Eye Damage - Category 1 H318 Causes serious eye damage.



GHS07

Acute Toxicity (Oral) - Category 4 H302 Harmful if swallowed.

Skin Sensitizer - Category 1 H317 May cause an allergic skin reaction.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05



GHS07



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
 POTASSIUM HYDROXIDE
 hydroquinone

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Trade name: R-201 DEVELOPER

(Contd. of page 1)

- **Hazard statements**

Harmful if swallowed.
 Causes severe skin burns and eye damage.
 May cause an allergic skin reaction.
 Suspected of causing genetic defects.
 Suspected of causing cancer.

- **Precautionary statements**

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not breathe dust/fume/gas/mist/vapours/spray.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Contaminated work clothing should not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.
 If swallowed: Call a poison center/doctor if you feel unwell.
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
 Immediately call a poison center/doctor.
 IF exposed or concerned: Get medical advice/attention.
 Specific treatment (see on this label).
 Take off contaminated clothing and wash it before reuse.
 If skin irritation or rash occurs: Get medical advice/attention.
 Wash contaminated clothing before reuse.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

3 Composition/Information on ingredients

- **Chemical characterization: Mixtures**

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

- **Dangerous components:**

1310-58-3	POTASSIUM HYDROXIDE	5-10% w/w *
123-31-9	hydroquinone	1-5% w/w *

* Actual concentration ranges are withheld as a trade secret.

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4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Immediately call a doctor.
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.

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- Prevent formation of aerosols.
- **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 receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **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 item 7.
- **Control parameters**

· Components with limit values that require monitoring at the workplace:	
1310-58-3 POTASSIUM HYDROXIDE	
EL	Ceiling: 2 mg/m ³
EV	Ceiling: 2 mg/m ³
123-31-9 hydroquinone	
EL	TWA: 1 mg/m ³ S(D)
EV	TWA: 2 mg/m ³

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 - Keep away from foodstuffs, beverages and feed.
 - Immediately remove all soiled and contaminated clothing.
 - Wash hands before breaks and at the end of work.
 - Avoid contact with the eyes.
 - Avoid contact with the eyes and skin.
- **Breathing equipment:**
 - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

· Form:	Liquid
· Color:	Light beige
· Odor:	Odorless
· Odor threshold:	Not determined.

· pH-value at 20 °C: 11

· Change in condition

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	100 °C

· Flash point: 165 °C

· Flammability (solid, gaseous): Not flammable.

· Ignition temperature: 515 °C

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits:

· Lower:	Not determined.
· Upper:	Not determined.

· Vapor pressure: Not determined.

· Density: Not determined.

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water: Fully miscible.

· Partition coefficient (n-octanol/water): Not determined.

· Viscosity:

· Dynamic:	Not determined.
· Kinematic:	Not determined.

· Solvent content:

Solids content: 15.0 %

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

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **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:**

1310-58-3 POTASSIUM HYDROXIDE

Oral	LD50	273 mg/kg (rat)
------	------	-----------------

123-31-9 hydroquinone

Oral	LD50	320 mg/kg (rat)
------	------	-----------------

· **Primary irritant effect:**

· **on the skin:** Strong caustic effect on skin and mucous membranes.

· **on the eye:**

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

· **Sensitization:** Sensitization possible through skin contact.

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

123-31-9	hydroquinone	3
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· **NTP (National Toxicology Program)**

None of the ingredients is listed.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

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- **Mobility in soil** No further relevant information available.

- **Ecotoxicological effects:**

- **Remark:** Very toxic for fish

- **Additional ecological information:**

- **General notes:**

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**

- **DOT/TDG, ADR, IMDG, IATA**

UN1719

- **UN proper shipping name**

- **DOT/TDG**

- **ADR**

- **IMDG**

- **IATA**

Caustic alkali liquids, n.o.s. (Potassium hydroxide)

1719 CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), ENVIRONMENTALLY HAZARDOUS

CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), MARINE POLLUTANT

CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE)

- **Transport hazard class(es)**

- **DOT/TDG (Transport dangerous goods):**



- **Class**

8 Corrosive substances

- **Label**

8

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· **ADR, IMDG**

· **Class** 8 Corrosive substances
 · **Label** 8

· **IATA**

· **Class** 8 Corrosive substances
 · **Label** 8

· **Packing group**
 · **DOT/TDG, ADR, IMDG, IATA** II

· **Environmental hazards:** Product contains environmentally hazardous substances: hydroquinone
 · **Marine pollutant:** Symbol (fish and tree)
 · **Special marking (ADR):** Symbol (fish and tree)

· **Special precautions for user** Warning: Corrosive substances
 · **Hazard identification number (Kemler code):** 80
 · **EMS Number:** F-A,S-B
 · **Segregation groups** Alkalis
 · **Stowage Category** A
 · **Segregation Code** SG22 Stow "away from" ammonium salts
 SG35 Stow "separated from" SGG1-acids

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **DOT/TDG**
 · **Quantity limitations** On passenger aircraft/rail: 1 L
 On cargo aircraft only: 30 L

· **ADR**

· **Excepted quantities (EQ)** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml

· **IMDG**

· **Limited quantities (LQ)** 1L
 · **Excepted quantities (EQ)** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":** UN 1719 CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), 8, II, ENVIRONMENTALLY HAZARDOUS

CA

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Safety Data Sheet

according to HPR, Schedule 1

Printing date 12/10/2021

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15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**

No further relevant information available.

- **Sara**

- **Section 355 (extremely hazardous substances):**

123-31-9	hydroquinone
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- **Section 313 (Specific toxic chemical listings):**

123-31-9	hydroquinone
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- **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

- **Canadian substance listings:**

- **Canadian Domestic Substances List (DSL)**

1310-58-3	POTASSIUM HYDROXIDE
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- **Canadian Non-Domestic Substances List (NDSL)**

None of the ingredients is listed.

- **Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients is listed.

- **Canadian Ingredient Disclosure list (limit 1%)**

All ingredients are listed.

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS05 GHS07 GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

POTASSIUM HYDROXIDE

hydroquinone

- **Hazard statements**

Harmful if swallowed.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

Suspected of causing cancer.

- **Precautionary statements**

Obtain special instructions before use.

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

Do not breathe dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing should not be allowed out of the workplace.

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

If swallowed: Call a poison center/doctor if you feel unwell.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

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Safety Data Sheet according to HPR, Schedule 1

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Reviewed on 12/10/2021

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IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

Immediately call a poison center/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Take off contaminated clothing and wash it before reuse.

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

Wash contaminated clothing before reuse.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:**

· **Date of the latest revision of the safety data sheet 12/10/2021 / -**

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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

Printing date 10.12.2021

Revision: 10.12.2021

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

- **1.1 Product identifier**
- **Trade name:** **R-201 DEVELOPER**
- **Article number:** 74961-01, 74961-10
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

SECTION 2: Hazards identification

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



health hazard

- Muta. 2 H341 Suspected of causing genetic defects.
Carc. 2 H351 Suspected of causing cancer.



corrosion

- Skin Corr. 1A H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.



environment

- Aquatic Acute 1 H400 Very toxic to aquatic life.



- Acute Tox. 4 H302 Harmful if swallowed.
Skin Sens. 1 H317 May cause an allergic skin reaction.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.

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· Hazard pictograms

GHS05 GHS07 GHS08 GHS09

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

POTASSIUM HYDROXIDE

hydroquinone

· Hazard statements

H302 Harmful if swallowed.

H314 Causes severe skin burns and 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.

· Precautionary statementsP303+P361+P353 **IF ON SKIN (or hair):** Take off immediately all contaminated clothing. Rinse skin with water [or shower].P305+P351+P338 **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

P321 Specific treatment (see on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.

P405 Store locked up.

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 Chemical characterisation: Mixtures****· Description:** Mixture of substances listed below with nonhazardous additions.**· Dangerous components:**

CAS: 1310-58-3 EINECS: 215-181-3	POTASSIUM HYDROXIDE ⚠ Skin Corr. 1A, H314; ⚠ Acute Tox. 4, H302	>2.5-≤10%
CAS: 123-31-9 EINECS: 204-617-8	hydroquinone ⚠ Muta. 2, H341; Carc. 2, H351; ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317	>2.5-≤10%

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

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SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

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

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:**

Call for a doctor immediately.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

· **5.2 Special hazards arising from the substance or mixture** No further relevant information available.

· **5.3 Advice for firefighters**

· **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

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

Wear protective equipment. Keep unprotected persons away.

· **6.2 Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

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

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralising agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

· **Information about fire - and explosion protection:** No special measures required.

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- 7.2 Conditions for safe storage, including any incompatibilities
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

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

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

1310-58-3 POTASSIUM HYDROXIDE

WEL Short-term value: 2 mg/m³

123-31-9 hydroquinone

WEL Long-term value: 0.5 mg/m³

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

- 8.2 Exposure controls

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

- **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· Eye protection:



Tightly sealed goggles

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Liquid
Colour:	Light beige
Odour:	Odourless
Odour threshold:	Not determined.

· pH-value at 20 °C: 11

· Change in condition

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	100 °C

· Flash point: 165 °C

· Flammability (solid, gas): Not applicable.

· Ignition temperature: 515 °C

· Decomposition temperature: Not determined.

· Auto-ignition temperature: Product is not selfigniting.

· Explosive properties: Product does not present an explosion hazard.

· Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

· Vapour pressure: Not determined.

· Density: Not determined.

· Relative density: Not determined.

· Vapour density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with water:

Fully miscible.

· Partition coefficient: n-octanol/water: Not determined.

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

· Solvent content:

VOC (EC) 0.00 %

Solids content: 15.0 %

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· 9.2 Other information

No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **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.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Harmful if swallowed.

· **LD/LC50 values relevant for classification:****1310-58-3 POTASSIUM HYDROXIDE**

Oral LD50 273 mg/kg (rat)

123-31-9 hydroquinone

Oral LD50 320 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **Additional toxicological information:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity**
Suspected of causing genetic defects.
- **Carcinogenicity**
Suspected of causing cancer.
- **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** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.

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- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Danger to drinking water if even extremely small quantities leak into the ground.
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 together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- | | |
|---|--|
| <ul style="list-style-type: none"> · 14.1 UN-Number · ADR, IMDG, IATA | UN1719 |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG · IATA | 1719 CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), ENVIRONMENTALLY HAZARDOUS CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), MARINE POLLUTANT
CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE) |
| <ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR, IMDG | |
| <ul style="list-style-type: none"> · Class · Label | 8 Corrosive substances.
8 |



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· IATA



- Class 8 Corrosive substances.
- Label 8

- 14.4 Packing group II
- ADR, IMDG, IATA

- 14.5 Environmental hazards: Product contains environmentally hazardous substances: hydroquinone
- Marine pollutant: Symbol (fish and tree)
- Special marking (ADR): Symbol (fish and tree)

- 14.6 Special precautions for user Warning: Corrosive substances.
- Hazard identification number (Kemler code): 80
- EMS Number: F-A,S-B
- Segregation groups Alkalis
- Stowage Category A
- Segregation Code SG22 Stow "away from" ammonium salts
SG35 Stow "separated from" SGG1-acids

- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code Not applicable.

· Transport/Additional information:

- ADR
- Limited quantities (LQ) 1L
- Excepted quantities (EQ) Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml
- Transport category 2
- Tunnel restriction code E

- IMDG
- Limited quantities (LQ) 1L
- Excepted quantities (EQ) Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

- UN "Model Regulation": UN 1719 CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), 8, II, ENVIRONMENTALLY HAZARDOUS

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.
- Seveso category E1 Hazardous to the Aquatic Environment
- Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t

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

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**

H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
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.

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 2: Germ cell mutagenicity – Category 2
Carc. 2: Carcinogenicity – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

GB

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 10.12.2021

Herziening van: 10.12.2021

RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

· 1.1 Productidentificatie

· Handelsnaam: **R-201 DEVELOPER**

· Artikelnummer: 74961-01, 74961-10

· UFI: NC62-2061-U00G-DSFR

· 1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik

Geen verdere relevante informatie verkrijgbaar.

· Toepassing van de stof / van de bereiding Laboratoriumchemicaliën

· 1.3 Details betreffende de verstreker van het veiligheidsinformatieblad

· Fabrikant/leverancier:

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: info@emsdiasum.com

www.emsdiasum.com

Aurion

Binnenhaven 5

6709 PD Wageningen

The Netherlands

Tel: 31 317 415094

Fax: 31 317 415955

email: info@aurion.nl

· Inlichtingengevende sector: Product safety department

· 1.4 Telefoonnummer voor noodgevallen:

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

RUBRIEK 2: Identificatie van de gevaren

· 2.1 Indeling van de stof of het mengsel

· Indeling overeenkomstig Verordening (EG) nr. 1272/2008



GHS08 gezondheidsgevaar

Muta. 2

H341 Verdacht van het veroorzaken van genetische schade.

Carc. 2

H351 Verdacht van het veroorzaken van kanker.



GHS05 corrosie

Skin Corr. 1A

H314 Veroorzaakt ernstige brandwonden en oogletsel.

Eye Dam. 1

H318 Veroorzaakt ernstig oogletsel.



GHS09 milieu

Aquatic Acute 1 H400 Zeer giftig voor in het water levende organismen.

(Vervolg op blz. 2)

Veiligheidsinformatieblad

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Herziening van: 10.12.2021

Handelsnaam: R-201 DEVELOPER

(Vervolg van blz. 1)



GHS07

Acute Tox. 4 H302 Schadelijk bij inslikken.
 Skin Sens. 1 H317 Kan een allergische huidreactie veroorzaken.

- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**
 Het product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- **Gevarenpictogrammen**



GHS05 GHS07 GHS08 GHS09

- **Signaalwoord** Gevaar
- **Gevaaraanduidende componenten voor de etikettering:**
 kaliumhydroxide
 hydrochinon
- **Gevenaanduidingen**
 H302 Schadelijk bij inslikken.
 H314 Veroorzaakt ernstige brandwonden en oogletsel.
 H317 Kan een allergische huidreactie veroorzaken.
 H341 Verdacht van het veroorzaken van genetische schade.
 H351 Verdacht van het veroorzaken van kanker.
 H400 Zeer giftig voor in het water levende organismen.
- **Veiligheidsaanbevelingen**
 P303+P361+P353 BIJ CONTACT MET DE HUID (of het haar): verontreinigde kleding onmiddellijk uittrekken.
 Huid met water afspoelen [of afdouchen].
 P305+P351+P338 BIJ CONTACT MET DE OGEN: voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.
 P310 Onmiddellijk een ANTIGIFCENTRUM/arts raadplegen.
 P321 Specifieke behandeling vereist (zie op dit etiket).
 P362+P364 Verontreinigde kleding uittrekken en wassen alvorens deze opnieuw te gebruiken.
 P405 Achter slot bewaren.
 P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.
- **2.3 Andere gevaren**
- **Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.

RUBRIEK 3: Samenstelling en informatie over de bestanddelen

- **3.2 Chemische karakterisering: Mengsels**
- **Beschrijving:** Mengsel van na elkaar aangevoerde stoffen met ongevaarlijke bijmengingen.

(Vervolg op blz. 3)

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 10.12.2021

Herziening van: 10.12.2021

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· Gevaarlijke inhoudstoffen:		
CAS: 1310-58-3 EINECS: 215-181-3	kaliumhydroxide ⚠ Skin Corr. 1A, H314; ⚠ Acute Tox. 4, H302	>2,5-≤10%
CAS: 123-31-9 EINECS: 204-617-8	hydrochinon ⚠ Muta. 2, H341; Carc. 2, H351; ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317	>2,5-≤10%

· **Aanvullende gegevens:**

De woordelijke inhoud van de opgegeven aanwijzingen inzake de mogelijke gevaren is te vinden in hoofdstuk 16.

RUBRIEK 4: Eerstehulpmaatregelen

· **4.1 Beschrijving van de eerstehulpmaatregelen**· **Algemene informatie:**

Verontreinigde kleding onmiddellijk uittrekken.

Het is mogelijk dat vergiftigingssymptomen pas na vele uren optreden. Om deze reden is medische controle gedurende minstens 48 uur na een ongeval noodzakelijk.

· **Na het inademen:**

Veel verse lucht toedienen en voor alle zekerheid een arts raadplegen.

Bij bewusteloosheid ligging en vervoer in stabiele zijligging.

· **Na huidcontact:** Onmiddellijk met water en zeep afwassen en goed naspoelen.· **Na oogcontact:** Ogen met open ooglid een aantal minuten onder stromend water afspoelen en dokter raadplegen.· **Na inslikken:**

Onmiddellijk arts raadplegen.

Drink zeer veel water en voer verse lucht aan. Onmiddellijk een dokter waarschuwen.

· **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** Geen verdere relevante informatie verkrijgbaar.· **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**

Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 5: Brandbestrijdingsmaatregelen

· **5.1 Blusmiddelen**· **Geschikte blusmiddelen:** Brandblusmaatregelen op omgeving afstemmen.· **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**

Geen verdere relevante informatie verkrijgbaar.

· **5.3 Advies voor brandweertieners**· **Speciale beschermende kleding:** Geen bijzondere maatregelen nodig.

RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

· **6.1 Persoonlijke voorzorgsmaatregelen, beschermingsmiddelen en noodprocedures**

Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.

· **6.2 Milieuvorzorgsmaatregelen:**

Bij indringen in afvalwater of riolering moet de bevoegde instantie gewaarschuwd worden.

Met veel water verdunnen.

Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.

· **6.3 InsluTINGS- en reinigingsmethoden en -materiaal:**

Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen.

Neutralisatiemiddel gebruiken.

Besmet materiaal zoals afval volgens punt 13 verwijderen.

Voor voldoende ventilatie zorgen.

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· 6.4 Verwijzing naar andere rubrieken

Informatie inzake veilig gebruik - zie hoofdstuk 7.

Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.

Informatie inzake berging - zie hoofdstuk 13.

RUBRIEK 7: Hantering en opslag

· 7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel

Voor goede ventilatie/afzuiging op de werkplaatsen zorgen.

Aërosolvorming vermijden.

· **Informatie m.b.t. brand- en ontploffingsgevaar:** Geen bijzondere maatregelen noodzakelijk.

· 7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten

· **Opslag:**

· **Eisen ten opzichte van opslagruimte en tanks:** Geen bijzondere eisen.

· **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.

· **Verdere inlichtingen over eisen m.b.t. de opslag:** Tanks ondoordringbaar gesloten houden.

· **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

· 8.1 Controleparameters

· **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.

· **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:**

Het produkt bevat geen relevante hoeveelheden van stoffen, die met betrekking tot de werkplaatsen, qua grenswaarden gecontroleerd moeten worden.

· **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.

· 8.2 Maatregelen ter beheersing van blootstelling

· **Persoonlijke beschermingsvoorzieningen:**

· **Algemene beschermings- en gezondheidsmaatregelen:**

Verwijderd houden van eet- en drinkwaren.

Verontreinigde kleding onmiddellijk uittrekken.

Vóór de pauze en aan het einde van werktijd handen wassen.

Aanraking met de ogen vermijden.

Aanraking met de ogen en de huid vermijden.

· **Ademhalingsbescherming:**

Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingsstoestel gebruiken.

· **Handbescherming:**



Veiligheidshandschoenen

Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.

Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.

Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.

· **Handschoenmateriaal**

De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant. Aangezien het product uit meerdere stoffen is samengesteld, is de duurzaamheid van de handschoenmaterialen niet vooraf berekenbaar en moet derhalve vóór het gebruik worden getest.

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- **Doordringingstijd van het handschoenmateriaal**
De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.
- **Oogbescherming:**



Nauw aansluitende veiligheidsbril

RUBRIEK 9: Fysische en chemische eigenschappen

· 9.1 Informatie over fysische en chemische basiseigenschappen

· Algemene gegevens

· Voorkomen:

Vorm:	Vloeistof
Kleur:	Lichtbeige
Geur:	Reukloos
Geurdrempelwaarde:	Niet bepaald.

· **pH-waarde bij 20 °C:** 11

· Toestandsverandering

Smelt-/vriespunt:	Niet bepaald.
Beginkookpunt en kooktraject:	100 °C

· **Flampunt:** 165 °C

· **Ontvlambaarheid (vast, gas):** Niet bruikbaar.

· **Ontstekingstemperatuur:** 515 °C

· **Ontledingstemperatuur:** Niet bepaald.

· **Zelfontbrandingstemperatuur:** Het produkt ontbrandt niet uit zichzelf.

· **Ontploffingseigenschappen:** Het produkt is niet ontploffingsgevaarlijk.

· Ontploffingsgrenzen:

Onderste:	Niet bepaald.
Bovenste:	Niet bepaald.

· **Dampspanning:** Niet bepaald.

Dichtheid:	Niet bepaald.
· Relatieve dichtheid	Niet bepaald.
· Dampdichtheid	Niet bepaald.
· Verdampingssnelheid	Niet bepaald.

· Oplosbaarheid in/mengbaarheid met

Water: Volledig mengbaar.

· **Verdelingscoëfficiënt: n-octanol/water:** Niet bepaald.

· Viscositeit

Dynamisch:	Niet bepaald.
Kinematisch:	Niet bepaald.

· Oplosmiddelgehalte:

VOC (EG) 0,00 %

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Gehalte aan vaste bestanddelen:	15,0 %
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9.2 Overige informatie	Geen verdere relevante informatie verkrijgbaar.
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RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit** Geen verdere relevante informatie verkrijgbaar.
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

RUBRIEK 11: Toxicologische informatie

11.1 Informatie over toxicologische effecten

- **Acute toxiciteit**
Schadelijk bij inslikken.

Indelingsrelevantie LD/LC50-waarden:

1310-58-3 kaliumhydroxide

Oraal	LD50	273 mg/kg (rat)
-------	------	-----------------

123-31-9 hydrochinon

Oraal	LD50	320 mg/kg (rat)
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- **Primaire aandoening:**
- **Huidcorrosie/-irritatie**
Veroorzaakt ernstige brandwonden en oogletsel.
- **Ernstig oogletsel/oogirritatie**
Veroorzaakt ernstig oogletsel.
- **Sensibilisatie van de luchtwegen/de huid**
Kan een allergische huidreactie veroorzaken.
- **Aanvullende toxicologische informatie:**
- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**
- **Mutageniteit in geslachtscellen**
Verdacht van het veroorzaken van genetische schade.
- **Kankerverwekkendheid**
Verdacht van het veroorzaken van kanker.
- **Giftigheid voor de voortplanting** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **STOT bij eenmalige blootstelling** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **STOT bij herhaalde blootstelling** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Gevaar bij inademing** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

RUBRIEK 12: Ecologische informatie

- **12.1 Toxiciteit**
- **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.
- **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.
- **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.
- **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.

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- **Ecotoxische effecten:**
- **Opmerking:** Zeer giftig voor vissen.
- **Verdere ecologische informatie:**
- **Algemene informatie:**
Waterbezwaarlijkheid (NL): A(1) zeer vergiftig voor in water levende organismen kan in aquatische milieu op lange termijn schadelijke effecten veroorzaken
Gevaar voor water klasse 3 (D) (Zelfclassificatie): gevaar voor water groot
Niet lozen in grondwater, oppervlaktewater of riolering, ook niet in kleine hoeveelheden.
Mag niet onverdund of niet geneutraliseerd in oppervlaktewater of in afwateringskanaal geloosd worden.
Gevaar voor drinkwater zelfs bij het uitlopen van zeer geringe hoeveelheden in de ondergrond.
In oppervlaktewater ook giftig voor vissen en plankton.
zeer giftig voor in het water levende organismen
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 13: Instructies voor verwijdering

- **13.1 Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.
- **Aanbevolen reinigingsmiddel:** Water, eventueel met toevoeging van reinigingsmiddelen.

RUBRIEK 14: Informatie met betrekking tot het vervoer

- **14.1 VN-nummer**
 - **ADR, IMDG, IATA** UNI719
 - **14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN**
 - **ADR** 1719 BIJTENDE ALKALISCHE VLOEISTOF, N.E.G. (KALIUMHYDROXIDE), MILIEUGEVAARLIJK
 - **IMDG** CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), MARINE POLLUTANT
 - **IATA** CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE)
 - **14.3 Transportgevarenklasse(n)**
 - **ADR, IMDG**
- 

- **klasse** 8 Bijtende stoffen
 - **Etiket** 8

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· IATA

· **Class** 8 Bijtende stoffen
 · **Label** 8

· **14.4 Verpakkingsgroep:**
 · **ADR, IMDG, IATA** II

· **14.5 Milieugevaren:** Produkt bevat milieugevaarlijke stoffen: hydrochinon
 · **Marine pollutant:** Symbool (vis en boom)
 · **Bijzondere kenmerking (ADR):** Symbool (vis en boom)

· **14.6 Bijzondere voorzorgen voor de gebruiker** Waarschuwing: Bijtende stoffen
 · **Gevaarsidentificatienummer (Kemler-getal):** 80
 · **EMS-nummer:** F-A,S-B
 · **Segregation groups** Alkalis
 · **Stowage Category** A
 · **Segregation Code** SG22 Stow "away from" ammonium salts
 SG35 Stow "separated from" SGG1-acids

· **14.7 Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code** Niet bruikbaar.

· Transport/verdere gegevens:

· **ADR**
 · **Beperkte hoeveelheden (LQ)** 1L
 · **Uitgezonderde hoeveelheden (EQ)** Code: E2
 Grootste netto hoeveelheid per binnenverpakking: 30 ml
 Grootste netto hoeveelheid per buitenverpakking: 500 ml
 · **Vervoerscategorie** 2
 · **Tunnelbeperkingscode** E

· **IMDG**
 · **Limited quantities (LQ)** 1L
 · **Excepted quantities (EQ)** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml

· **VN "Model Regulation":** UN 1719 BIJTENDE ALKALISCHE VLOEISTOF, N.E.G. (KALIUMHYDROXIDE), 8, II, MILIEUGEVAARLIJK

RUBRIEK 15: Regelgeving

· **15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel**

· **SZW-lijst van kankerverwekkende stoffen**

geen der bestanddelen staat op de lijst.

· **SZW-lijst van mutagene stoffen**

geen der bestanddelen staat op de lijst.

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· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid**

geen der bestanddelen staat op de lijst.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling**

geen der bestanddelen staat op de lijst.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding**

geen der bestanddelen staat op de lijst.

· **Lijst Zeer Zorgwekkende Stoffen (ZZS)**

geen der bestanddelen staat op de lijst.

· **Lijst van Potentieel Zeer Zorgwekkende Stoffen**

geen der bestanddelen staat op de lijst.

· **Richtlijn 2012/18/EU**

· **Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I** geen der bestanddelen staat op de lijst.

· **Seveso-categorie E1** Gevaar voor het aquatisch milieu

· **Drempelwaarde (ton) voor toepassing van voorschriften voor lagedrempelinrichtingen** 100 t

· **Drempelwaarde (ton) voor toepassing van voorschriften voor hogedrempelinrichtingen** 200 t

· **Verordening (EG) nr. 1907/2006 BIJLAGE XVII** Beperkingsvoorwaarden: 3

· **Richtlijn 2011/65/EU betreffende beperking van het gebruik van bepaalde gevaarlijke stoffen in elektrische en elektronische apparatuur - Bijlage II**

geen der bestanddelen staat op de lijst.

· **VERORDENING (EU) 2019/1148**

· **Bijlage I - PRECURSOREN VOOR EXPLOSIEVEN WAARVOOR EEN BEPERKING GELDT (Bovengrenswaarde ten behoeve van vergunningverlening op grond van artikel 5, lid 3)**

geen der bestanddelen staat op de lijst.

· **Bijlage II - PRECURSOREN VOOR EXPLOSIEVEN DIE MOETEN WORDEN GEMELD**

geen der bestanddelen staat op de lijst.

· **Verordening (EG) nr. 273/2004 inzake drugsprecursoren**

geen der bestanddelen staat op de lijst.

· **Verordening (EG) Nr. 111/2005 houdende voorschriften voor het toezicht op de handel tussen de Gemeenschap en derde landen in drugsprecursoren**

geen der bestanddelen staat op de lijst.

· **Nationale voorschriften:**

· **Gevaarklasse v. water:**

Waterbezwaarlijkheid (NL): A(1) zeer vergiftig voor in water levende organismen kan in aquatische milieu op lange termijn schadelijke effecten veroorzaken

· **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

· **Relevante zinnen**

H302 Schadelijk bij inslikken.

H314 Veroorzaakt ernstige brandwonden en oogletsel.

H317 Kan een allergische huidreactie veroorzaken.

H318 Veroorzaakt ernstig oogletsel.

H341 Verdacht van het veroorzaken van genetische schade.

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*H351 Verdacht van het veroorzaken van kanker.**H400 Zeer giftig voor in het water levende organismen.***Afkortingen en acroniemen:***ADR: Accord relatif au transport international 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)**VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Acute Tox. 4: Acute toxiciteit – Categorie 4**Skin Corr. 1A: Huidcorrosie/irritatie – Categorie 1A**Eye Dam. 1: Ernstig oogletsel/oogirritatie – Categorie 1**Skin Sens. 1: Sensibilisatie van de huid – Categorie 1**Muta. 2: Mutageniteit in geslachtscellen – Categorie 2**Carc. 2: Kankerverwekkendheid – Categorie 2**Aquatic Acute 1: Gevaar voor het aquatisch milieu - acuut aquatisch gevaar – Categorie 1*

NL

Fiche de données de sécurité

selon 1907/2006/CE, Article 31

Date d'impression : 10.12.2021

Révision: 10.12.2021

RUBRIQUE 1: Identification de la substance/du mélange et de la société/l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** R-201 DEVELOPER
- **Code du produit:** 74961-01, 74961-10
- **UFI:** NC62-2061-U00G-DSFR
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**
Pas d'autres informations importantes disponibles.
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Service chargé des renseignements:** Product safety department
- **1.4 Numéro d'appel d'urgence:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

RUBRIQUE 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS08 danger pour la santé

Muta. 2 H341 Susceptible d'induire des anomalies génétiques.
Carc. 2 H351 Susceptible de provoquer le cancer.



GHS05 corrosion

Skin Corr. 1A H314 Provoque de graves brûlures de la peau et de graves lésions des yeux.
Eye Dam. 1 H318 Provoque de graves lésions des yeux.



GHS09 environnement

Aquatic Acute 1 H400 Très toxique pour les organismes aquatiques.



GHS07

Acute Tox. 4 H302 Nocif en cas d'ingestion.
Skin Sens. 1 H317 Peut provoquer une allergie cutanée.

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** Le produit est classifié et étiqueté selon le règlement CLP.

(suite page 2)

Fiche de données de sécurité

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Révision: 10.12.2021

Nom du produit: **R-201 DEVELOPER**

(suite de la page 1)

· **Pictogrammes de danger**

GHS05 GHS07 GHS08 GHS09

· **Mention d'avertissement** Danger· **Composants dangereux déterminants pour l'étiquetage:**

hydroxyde de potassium

1,4-dihydroxybenzène

· **Mentions de danger**

H302 Nocif en cas d'ingestion.

H314 Provoque de graves brûlures de la peau et de graves lésions des yeux.

H317 Peut provoquer une allergie cutanée.

H341 Susceptible d'induire des anomalies génétiques.

H351 Susceptible de provoquer le cancer.

H400 Très toxique pour les organismes aquatiques.

· **Conseils de prudence**P303+P361+P353 **EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux):** Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau [ou se doucher].P305+P351+P338 **EN CAS DE CONTACT AVEC LES YEUX:** Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.

P310 Appeler immédiatement un CENTRE ANTIPOISON/un médecin.

P321 Traitement spécifique (voir sur cette étiquette).

P362+P364 Enlever les vêtements contaminés et les laver avant réutilisation.

P405 Garder sous clef.

P501 Éliminer le contenu/récipient conformément à la réglementation locale/régionale/nationale/internationale.

· **2.3 Autres dangers**· **Résultats des évaluations PBT et vPvB**· **PBT:** Non applicable.· **vPvB:** Non applicable.

RUBRIQUE 3: Composition/informations sur les composants

· **3.2 Caractérisation chimique: Mélanges**· **Description:** Mélange des substances mentionnées à la suite avec des additifs non dangereux.· **Composants dangereux:**

CAS: 1310-58-3 EINECS: 215-181-3	hydroxyde de potassium ⚠ Skin Corr. 1A, H314; ⚠ Acute Tox. 4, H302	>2,5-≤10%
CAS: 123-31-9 EINECS: 204-617-8	1,4-dihydroxybenzène ⚠ Muta. 2, H341; Carc. 2, H351; ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317	>2,5-≤10%

· **Indications complémentaires:** Pour le libellé des phrases de risque citées, se référer au chapitre 16.

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RUBRIQUE 4: Premiers secours

- **4.1 Description des premiers secours**
- **Remarques générales:**
Enlever immédiatement les vêtements contaminés par le produit.
Les symptômes d'intoxication peuvent apparaître après de nombreuses heures seulement; une surveillance médicale est donc nécessaire au moins 48 heures après un accident.
- **Après inhalation:**
Donner de l'air frais en abondance et consulter un médecin pour plus de sécurité.
En cas d'inconscience, coucher et transporter la personne en position latérale stable.
- **Après contact avec la peau:** Laver immédiatement à l'eau et au savon et bien rincer.
- **Après contact avec les yeux:**
Rincer les yeux, pendant plusieurs minutes, sous l'eau courante en écartant bien les paupières et consulter un médecin.
- **Après ingestion:**
Consulter immédiatement un médecin.
Boire de l'eau en abondance et donner de l'air frais. Consulter immédiatement un médecin.
- **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.
- **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**
Pas d'autres informations importantes disponibles.

RUBRIQUE 5: Mesures de lutte contre l'incendie

- **5.1 Moyens d'extinction**
- **Moyens d'extinction:** Adapter les mesures d'extinction d'incendie à l'environnement.
- **5.2 Dangers particuliers résultant de la substance ou du mélange**
Pas d'autres informations importantes disponibles.
- **5.3 Conseils aux pompiers**
- **Équipement spécial de sécurité:** Aucune mesure particulière n'est requise.

RUBRIQUE 6: Mesures à prendre en cas de dispersion accidentelle

- **6.1 Précautions individuelles, équipement de protection et procédures d'urgence**
Porter un équipement de sécurité. Eloigner les personnes non protégées.
- **6.2 Précautions pour la protection de l'environnement:**
En cas de pénétration dans les eaux ou les égouts, avertir les autorités compétentes.
Diluer avec beaucoup d'eau.
Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.
- **6.3 Méthodes et matériel de confinement et de nettoyage:**
Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).
Utiliser un neutralisant.
Évacuer les matériaux contaminés en tant que déchets conformément au point 13.
Assurer une aération suffisante.
- **6.4 Référence à d'autres rubriques**
Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.
Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.
Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

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RUBRIQUE 7: Manipulation et stockage

- **7.1 Précautions à prendre pour une manipulation sans danger**
Veiller à une bonne ventilation/aspiration du poste de travail.
Eviter la formation d'aérosols.
- **Préventions des incendies et des explosions:** Aucune mesure particulière n'est requise.
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Aucune exigence particulière.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:** Tenir les emballages hermétiquement fermés.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

- **8.1 Paramètres de contrôle**
- **Indications complémentaires pour l'agencement des installations techniques:**
Sans autre indication, voir point 7.

- **Composants présentant des valeurs-seuil à surveiller par poste de travail:**

1310-58-3 hydroxyde de potassium

VLEP Valeur momentanée: 2 mg/m³

123-31-9 1,4-dihydroxybenzène

VLEP Valeur à long terme: 2 mg/m³
C2, M2

- **Remarques supplémentaires:**
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.
- **8.2 Contrôles de l'exposition**
- **Equipement de protection individuel:**
- **Mesures générales de protection et d'hygiène:**
Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.
Retirer immédiatement les vêtements souillés ou humectés.
Se laver les mains avant les pauses et en fin de travail.
Eviter tout contact avec les yeux.
Eviter tout contact avec les yeux et avec la peau.
- **Protection respiratoire:**
En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.
- **Protection des mains:**



Gants de protection

Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.
À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.
Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

- **Matériau des gants**

Le choix de gants appropriés dépend non seulement du matériau, mais aussi d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre. Puisque le produit représente une préparation composée de plusieurs substances, la résistance des matériaux des gants ne peut pas être calculée à l'avance et doit, alors, être contrôlée avant l'utilisation.

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- **Temps de pénétration du matériau des gants**
Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.
- **Protection des yeux:**



Lunettes de protection hermétiques

RUBRIQUE 9: Propriétés physiques et chimiques

· 9.1 Informations sur les propriétés physiques et chimiques essentielles

· Indications générales

· Aspect:

Forme:	Liquide
Couleur:	Beige clair
Odeur:	Inodore
Seuil olfactif:	Non déterminé.

· valeur du pH à 20 °C:	11
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· Changement d'état

Point de fusion/point de congélation:	Non déterminé.
Point initial d'ébullition et intervalle d'ébullition:	100 °C

· Point d'éclair	165 °C
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· Inflammabilité (solide, gaz):	Non applicable.
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· Température d'inflammation:	515 °C
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· Température de décomposition:	Non déterminé.
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· Température d'auto-inflammabilité:	Le produit ne s'enflamme pas spontanément.
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· Propriétés explosives:	Le produit n'est pas explosif.
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· Limites d'explosion:

Inférieure:	Non déterminé.
Supérieure:	Non déterminé.

· Pression de vapeur:	Non déterminé.
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· Densité:	Non déterminée.
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· Densité relative	Non déterminé.
--------------------	----------------

· Densité de vapeur:	Non déterminé.
----------------------	----------------

· Taux d'évaporation:	Non déterminé.
-----------------------	----------------

· Solubilité dans/miscibilité avec l'eau:	Entièrement miscible
---	----------------------

· Coefficient de partage: n-octanol/eau:	Non déterminé.
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· Viscosité:

Dynamique:	Non déterminé.
Cinématique:	Non déterminé.

· Teneur en solvants:

VOC (CE)	0,00 %
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Teneur en substances solides:	15,0 %
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· 9.2 Autres informations	Pas d'autres informations importantes disponibles.
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RUBRIQUE 10: Stabilité et réactivité

- **10.1 Réactivité** Pas d'autres informations importantes disponibles.
- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

RUBRIQUE 11: Informations toxicologiques

· 11.1 Informations sur les effets toxicologiques

· Toxicité aiguë

Nocif en cas d'ingestion.

· Valeurs LD/LC50 déterminantes pour la classification:

1310-58-3 hydroxyde de potassium

Oral	LD50	273 mg/kg (rat)
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123-31-9 1,4-dihydroxybenzène

Oral	LD50	320 mg/kg (rat)
------	------	-----------------

- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée**
Provoque de graves brûlures de la peau et de graves lésions des yeux.
- **Lésions oculaires graves/irritation oculaire**
Provoque de graves lésions des yeux.
- **Sensibilisation respiratoire ou cutanée**
Peut provoquer une allergie cutanée.
- **Indications toxicologiques complémentaires:**
- **Effets CMR (cancérogène, mutagène et toxique pour la reproduction)**
- **Mutagénicité sur les cellules germinales**
Susceptible d'induire des anomalies génétiques.
- **Cancérogénicité**
Susceptible de provoquer le cancer.
- **Toxicité pour la reproduction**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité spécifique pour certains organes cibles - exposition unique**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité spécifique pour certains organes cibles - exposition répétée**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Danger par aspiration** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

RUBRIQUE 12: Informations écologiques

- **12.1 Toxicité**
- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.

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- **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Effets écotoxiques:**
- **Remarque:** Très toxique chez les poissons.
- **Autres indications écologiques:**
- **Indications générales:**
 Catégorie de pollution des eaux 3 (D) (Classification propre): très polluant
 Ne pas laisser pénétrer dans la nappe phréatique, les eaux ou les canalisations, même pas en petite quantité.
 Ne doit pas pénétrer à l'état non dilué ou non neutralisé dans les eaux usées ou le collecteur.
 Danger pour l'eau potable dès fuite d'une quantité minimale dans le sous-sol.
 Dans les eaux, également toxique pour les poissons et le plancton.
 Très toxique pour organismes aquatiques.
- **12.5 Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

RUBRIQUE 13: Considérations relatives à l'élimination

- **13.1 Méthodes de traitement des déchets**
- **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.
- **Produit de nettoyage recommandé:** Eau, éventuellement avec des produits de nettoyage

RUBRIQUE 14: Informations relatives au transport

- | | |
|--|--|
| <ul style="list-style-type: none"> · 14.1 Numéro ONU · ADR, IMDG, IATA | <p style="text-align: center;">UN1719</p> |
| <ul style="list-style-type: none"> · 14.2 Désignation officielle de transport de l'ONU · ADR · IMDG · IATA | <p>1719 LIQUIDE ALCALIN CAUSTIQUE, N.S.A.
(HYDROXYDE DE POTASSIUM), DANGEREUX POUR
L'ENVIRONNEMENT</p> <p>CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM
HYDROXIDE), MARINE POLLUTANT</p> <p>CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM
HYDROXIDE)</p> |
| <ul style="list-style-type: none"> · 14.3 Classe(s) de danger pour le transport · ADR, IMDG | <div style="display: flex; align-items: center; justify-content: center;">   </div> <p style="margin-top: 10px;">· Classe</p> |

8 Matières corrosives.

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· Étiquette	8
· IATA	
	
· Class	8 Matières corrosives.
· Label	8
· 14.4 Groupe d'emballage	
· ADR, IMDG, IATA	II
· 14.5 Dangers pour l'environnement:	Le produit contient matières dangereuses pour l'environnement : 1,4-dihydroxybenzène
· Marine Pollutant:	Signe conventionnel (poisson et arbre)
· Marquage spécial (ADR):	Signe conventionnel (poisson et arbre)
· 14.6 Précautions particulières à prendre par l'utilisateur	Attention: Matières corrosives.
· Numéro d'identification du danger (Indice Kemler):	80
· No EMS:	F-A,S-B
· Segregation groups	Alkalis
· Stowage Category	A
· Segregation Code	SG22 Stow "away from" ammonium salts SG35 Stow "separated from" SGG1-acids
· 14.7 Transport en vrac conformément à l'annexe II de la convention Marpol et au recueil IBC	Non applicable.
· Indications complémentaires de transport:	
· ADR	
· Quantités limitées (LQ)	1L
· Quantités exceptées (EQ)	Code: E2 Quantité maximale nette par emballage intérieur: 30 ml Quantité maximale nette par emballage extérieur: 500 ml
· Catégorie de transport	2
· Code de restriction en tunnels	E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· "Règlement type" de l'ONU:	UN 1719 LIQUIDE ALCALIN CAUSTIQUE, N.S.A. (HYDROXYDE DE POTASSIUM), 8, II, DANGEREUX POUR L'ENVIRONNEMENT

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RUBRIQUE 15: Informations relatives à la réglementation

- **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
- **Directive 2012/18/UE**
- **Substances dangereuses désignées - ANNEXE I** Aucun des composants n'est compris.
- **Catégorie SEVESO E1** Danger pour l'environnement aquatique
- **Quantité seuil (tonnes) pour l'application des exigences relatives au seuil bas** 100 t
- **Quantité seuil (tonnes) pour l'application des exigences relatives au seuil haut** 200 t
- **RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII** Conditions de limitation: 3
- **Directive 2011/65/UE relative à la limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques – Annexe II**
- Aucun des composants n'est compris.
- **RÈGLEMENT (UE) 2019/1148**
- **Annexe I - PRÉCURSEURS D'EXPLOSIFS FAISANT L'OBJET DE RESTRICTIONS (Valeur limite maximale aux fins de l'octroi d'une licence en vertu de l'article 5, paragraphe 3)**
- Aucun des composants n'est compris.
- **Annexe II - PRÉCURSEURS D'EXPLOSIFS DEVANT FAIRE L'OBJET D'UN SIGNALLEMENT**
- Aucun des composants n'est compris.
- **Règlement (CE) n° 273/2004 relatif aux précurseurs de drogues**
- Aucun des composants n'est compris.
- **Règlement (CE) n° 111/2005 fixant des règles pour la surveillance du commerce des précurseurs des drogues entre la Communauté et les pays tiers**
- Aucun des composants n'est compris.
- **15.2 Évaluation de la sécurité chimique:** Une évaluation de la sécurité chimique n'a pas été réalisée.

RUBRIQUE 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

- **Phrases importantes**
- H302 Nocif en cas d'ingestion.
- H314 Provoque de graves brûlures de la peau et de graves lésions des yeux.
- H317 Peut provoquer une allergie cutanée.
- H318 Provoque de graves lésions des yeux.
- H341 Susceptible d'induire des anomalies génétiques.
- H351 Susceptible de provoquer le cancer.
- H400 Très toxique pour les organismes aquatiques.
- **Acronymes et abréviations:**
- ADR: Accord relatif au transport international des marchandises dangereuses par route
- 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)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 4: Toxicité aiguë – Catégorie 4

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Skin Corr. 1A: Corrosion cutanée/irritation cutanée – Catégorie 1A
Eye Dam. 1: Lésions oculaires graves/irritation oculaire – Catégorie 1
Skin Sens. 1: Sensibilisation cutanée – Catégorie 1
Muta. 2: Mutagénicité sur les cellules germinales – Catégorie 2
Carc. 2: Cancérogénicité – Catégorie 2
Aquatic Acute 1: Dangers pour le milieu aquatique- toxicité aiguë pour le milieu aquatique – Catégorie 1

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Sicherheitsdatenblatt

gemäß 1907/2006/EG, Artikel 31

Druckdatum: 10.12.2021

überarbeitet am: 10.12.2021

ABSCHNITT 1: Bezeichnung des Stoffs beziehungsweise des Gemischs und des Unternehmens

- **1.1 Produktidentifikator**
- **Handelsname: R-201 DEVELOPER**
- **Artikelnummer:** 74961-01, 74961-10
- **UFI:** NC62-2061-U00G-DSFR
- **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**
Keine weiteren relevanten Informationen verfügbar.
- **Verwendung des Stoffes / des Gemisches Laborchemikalien**
- **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**
- **Hersteller/Lieferant:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com

Science Services GmbH
Unterhachinger Str. 75
81737 München Germany

Tel: +49(0)89 18 93 668-0
safety@scienceservices.de

Deutschland: +49 (0)89 19240, 24h Giftnotruf Munchen, www.toxinfo.org
Osterreich: +43 1406 43 43, Gesundheit Osterreich GmbH, 24 h
- **Auskunfteibereich:** Product safety department
- **1.4 Notrufnummer:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

ABSCHNITT 2: Mögliche Gefahren

- **2.1 Einstufung des Stoffs oder Gemischs**
- **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS08 Gesundheitsgefahr

- | | |
|---------|--|
| Muta. 2 | H341 Kann vermutlich genetische Defekte verursachen. |
| Carc. 2 | H351 Kann vermutlich Krebs erzeugen. |



GHS05 Ätzwirkung

- | | |
|---------------|--|
| Skin Corr. 1A | H314 Verursacht schwere Verätzungen der Haut und schwere Augenschäden. |
| Eye Dam. 1 | H318 Verursacht schwere Augenschäden. |



GHS09 Umwelt

- | | |
|-----------------|--|
| Aquatic Acute 1 | H400 Sehr giftig für Wasserorganismen. |
|-----------------|--|

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GHS07

Acute Tox. 4 H302 Gesundheitsschädlich bei Verschlucken.

Skin Sens. 1 H317 Kann allergische Hautreaktionen verursachen.

· 2.2 Kennzeichnungselemente

· Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008

Das Produkt ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

· Gefahrenpiktogramme



GHS05

GHS07

GHS08

GHS09

· Signalwort Gefahr

· Gefahrbestimmende Komponenten zur Etikettierung:

Kaliumhydroxid

1,4-Dihydroxybenzol

· Gefahrenhinweise

H302 Gesundheitsschädlich bei Verschlucken.

H314 Verursacht schwere Verätzungen der Haut und schwere Augenschäden.

H317 Kann allergische Hautreaktionen verursachen.

H341 Kann vermutlich genetische Defekte verursachen.

H351 Kann vermutlich Krebs erzeugen.

H400 Sehr giftig für Wasserorganismen.

· Sicherheitshinweise

P303+P361+P353 BEI BERÜHRUNG MIT DER HAUT (oder dem Haar): Alle kontaminierten Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen [oder duschen].

P305+P351+P338 BEI KONTAKT MIT DEN AUGEN: Einige Minuten lang behutsam mit Wasser spülen. Eventuell vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter spülen.

P310 Sofort GIFTINFORMATIONSZENTRUM/Arzt anrufen.

P321 Besondere Behandlung (siehe auf diesem Kennzeichnungsetikett).

P362+P364 Kontaminierte Kleidung ausziehen und vor erneutem Tragen waschen.

P405 Unter Verschluss aufbewahren.

P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.

· 2.3 Sonstige Gefahren

· Ergebnisse der PBT- und vPvB-Beurteilung

· **PBT:** Nicht anwendbar.· **vPvB:** Nicht anwendbar.

ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

· 3.2 Chemische Charakterisierung: Gemische

· **Beschreibung:** Gemisch aus nachfolgend angeführten Stoffen mit ungefährlichen Beimengungen.

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· Gefährliche Inhaltsstoffe:		
CAS: 1310-58-3 EINECS: 215-181-3	Kaliumhydroxid ⚠ Skin Corr. 1A, H314; ⚠ Acute Tox. 4, H302	>2,5-≤10%
CAS: 123-31-9 EINECS: 204-617-8	1,4-Dihydroxybenzol ⚠ Muta. 2, H341; ⚠ Carc. 2, H351; ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; ⚠ Acute Tox. 4, H302; ⚠ Skin Sens. 1, H317	>2,5-≤10%

· **Zusätzliche Hinweise:** Der Wortlaut der angeführten Gefahrenhinweise ist dem Abschnitt 16 zu entnehmen.

ABSCHNITT 4: Erste-Hilfe-Maßnahmen

· 4.1 Beschreibung der Erste-Hilfe-Maßnahmen

· **Allgemeine Hinweise:**

Mit Produkt verunreinigte Kleidungsstücke unverzüglich entfernen.

Vergiftungssymptome können erst nach vielen Stunden auftreten, deshalb ärztliche Überwachung mindestens 48 Stunden nach einem Unfall.

· **Nach Einatmen:**

Reichlich Frischluftzufuhr und sicherheitshalber Arzt aufsuchen.

Bei Bewusstlosigkeit Lagerung und Transport in stabiler Seitenlage.

· **Nach Hautkontakt:** Sofort mit Wasser und Seife abwaschen und gut nachspülen.

· **Nach Augenkontakt:**

Augen bei geöffnetem Lidspalt mehrere Minuten unter fließendem Wasser abspülen und Arzt konsultieren.

· **Nach Verschlucken:**

Sofort Arzt aufsuchen.

Reichlich Wasser nachtrinken und Frischluftzufuhr. Unverzüglich Arzt hinzuziehen.

· 4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen

Keine weiteren relevanten Informationen verfügbar.

· 4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung

Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

· 5.1 Löschmittel

· **Geeignete Löschmittel:** Feuerlöschmaßnahmen auf die Umgebung abstimmen.

· 5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren

Keine weiteren relevanten Informationen verfügbar.

· 5.3 Hinweise für die Brandbekämpfung

· **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

· **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**
Schutzausrüstung tragen. Ungeschützte Personen fernhalten.

· 6.2 Umweltschutzmaßnahmen:

Bei Eindringen in Gewässer oder Kanalisation zuständige Behörden benachrichtigen.

Mit viel Wasser verdünnen.

Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.

· 6.3 Methoden und Material für Rückhaltung und Reinigung:

Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.

Neutralisationsmittel anwenden.

Kontaminiertes Material als Abfall nach Abschnitt 13 entsorgen.

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- Für ausreichende Lüftung sorgen.
- **6.4 Verweis auf andere Abschnitte**
Informationen zur sicheren Handhabung siehe Abschnitt 7.
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.
Informationen zur Entsorgung siehe Abschnitt 13.

ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung**
Für gute Belüftung/Absaugung am Arbeitsplatz sorgen.
Aerosolbildung vermeiden.
- **Hinweise zum Brand- und Explosionsschutz:** Keine besonderen Maßnahmen erforderlich.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** Keine besonderen Anforderungen.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:** Behälter dicht geschlossen halten.
- **Lagerklasse:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** -
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **8.1 Zu überwachende Parameter**
- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.

· Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:
--

123-31-9 1,4-Dihydroxybenzol

MAK als Dampf und Aerosol

- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.

- **8.2 Begrenzung und Überwachung der Exposition**
- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:**
Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.
Besmutzte, getränkte Kleidung sofort ausziehen.
Vor den Pausen und bei Arbeitsende Hände waschen.
Berührung mit den Augen vermeiden.
Berührung mit den Augen und der Haut vermeiden.
- **Atemschutz:**
Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition umluftunabhängiges Atemschutzgerät verwenden.
- **Handschutz:**



Schutzhandschuhe

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein. Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.

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Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

- **Handschuhmaterial**

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich. Da das Produkt eine Zubereitung aus mehreren Stoffen darstellt, ist die Beständigkeit von Handschuhmaterialien nicht vorausberechenbar und muß deshalb vor dem Einsatz überprüft werden.

- **Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

- **Augenschutz:**



Dichtschließende Schutzbrille

ABSCHNITT 9: Physikalische und chemische Eigenschaften

- **9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften**

- **Allgemeine Angaben**

- **Aussehen:**

Form: Flüssigkeit

Farbe: Hellbeige

- Geruch: Geruchlos

- Geruchsschwelle: Nicht bestimmt.

- pH-Wert bei 20 °C: 11

- **Zustandsänderung**

Schmelzpunkt/Gefrierpunkt: Nicht bestimmt.

Siedebeginn und Siedebereich: 100 °C

- Flammpunkt: 165 °C

- Entzündbarkeit (fest, gasförmig): Nicht anwendbar.

- Zündtemperatur: 515 °C

- Zersetzungstemperatur: Nicht bestimmt.

- Selbstentzündungstemperatur: Das Produkt ist nicht selbstentzündlich.

- Explosive Eigenschaften: Das Produkt ist nicht explosionsgefährlich.

- **Explosionsgrenzen:**

Untere: Nicht bestimmt.

Obere: Nicht bestimmt.

- Dampfdruck: Nicht bestimmt.

- Dichte: Nicht bestimmt.

- Relative Dichte: Nicht bestimmt.

- Dampfdichte: Nicht bestimmt.

- Verdampfungsgeschwindigkeit: Nicht bestimmt.

- **Löslichkeit in / Mischbarkeit mit**

Wasser: Vollständig mischbar.

- Verteilungskoeffizient: n-Octanol/Wasser: Nicht bestimmt.

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· Viskosität:	
Dynamisch:	Nicht bestimmt.
Kinematisch:	Nicht bestimmt.
· Lösemittelgehalt:	
VOC (EU)	0,00 %
Festkörpergehalt:	15,0 %
· 9.2 Sonstige Angaben	Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität** Keine weiteren relevanten Informationen verfügbar.
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität**
Gesundheitsschädlich bei Verschlucken.

- **Einstufungsrelevante LD/LC50-Werte:**

1310-58-3 Kaliumhydroxid

Oral	LD50	273 mg/kg (rat)
------	------	-----------------

123-31-9 1,4-Dihydroxybenzol

Oral	LD50	320 mg/kg (rat)
------	------	-----------------

- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut**
Verursacht schwere Verätzungen der Haut und schwere Augenschäden.
- **Schwere Augenschädigung/-reizung**
Verursacht schwere Augenschäden.
- **Sensibilisierung der Atemwege/Haut**
Kann allergische Hautreaktionen verursachen.
- **Zusätzliche toxikologische Hinweise:**
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
- **Keimzell-Mutagenität**
Kann vermutlich genetische Defekte verursachen.
- **Karzinogenität**
Kann vermutlich Krebs erzeugen.
- **Reproduktionstoxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Spezifische Zielorgan-Toxizität bei einmaliger Exposition**
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Spezifische Zielorgan-Toxizität bei wiederholter Exposition**
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

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· **Aspirationsgefahr** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
- **Ökotoxische Wirkungen:**
- **Bemerkung:** Sehr giftig für Fische.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**
 Wassergefährdungsklasse 3 (Selbsteinstufung): stark wassergefährdend
 Nicht in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen, auch nicht in kleinen Mengen.
 Darf nicht unverdünnt bzw. unneutralisiert ins Abwasser bzw. in den Vorfluter gelangen.
 Trinkwassergefährdung bereits beim Auslaufen geringster Mengen in den Untergrund.
 In Gewässern auch giftig für Fische und Plankton.
 sehr giftig für Wasserorganismen
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.
- **Empfohlenes Reinigungsmittel:** Wasser, gegebenenfalls mit Zusatz von Reinigungsmitteln.

ABSCHNITT 14: Angaben zum Transport

- | | |
|--|--|
| <ul style="list-style-type: none"> · 14.1 UN-Nummer · ADR, IMDG, IATA | <p>UN1719</p> |
| <ul style="list-style-type: none"> · 14.2 Ordnungsgemäße UN-Versandbezeichnung · ADR · IMDG · IATA | <p>1719 ÄTZENDER ALKALISCHER FLÜSSIGER STOFF,
 N.A.G. (KALIUMHYDROXID), UMWELTGEFÄHRDEND
 CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM
 HYDROXIDE), MARINE POLLUTANT
 CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM
 HYDROXIDE)</p> |

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· **14.3 Transportgefahrenklassen**

· **ADR, IMDG**



· **Klasse** 8 Ätzende Stoffe
 · **Gefahrzettel** 8

· **IATA**



· **Class** 8 Ätzende Stoffe
 · **Label** 8

· **14.4 Verpackungsgruppe**

· **ADR, IMDG, IATA** II

· **14.5 Umweltgefahren:**

Das Produkt enthält umweltgefährdende Stoffe: 1,4-Dihydroxybenzol
 · **Marine pollutant:** Symbol (Fisch und Baum)
 · **Besondere Kennzeichnung (ADR):** Symbol (Fisch und Baum)

· **14.6 Besondere Vorsichtsmaßnahmen für den Verwender**

Achtung: Ätzende Stoffe
 · **Nummer zur Kennzeichnung der Gefahr (Kemler-Zahl):** 80
 · **EMS-Nummer:** F-A,S-B
 · **Segregation groups** Alkalis
 · **Stowage Category** A
 · **Segregation Code** SG22 Stow "away from" ammonium salts
 SG35 Stow "separated from" SGG1-acids

· **14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code** Nicht anwendbar.

· **Transport/weitere Angaben:**

· **ADR**
 · **Begrenzte Menge (LQ)** 1L
 · **Freigestellte Mengen (EQ)** Code: E2
 Höchste Nettomenge je Innenverpackung: 30 ml
 Höchste Nettomenge je Außenverpackung: 500 ml
 · **Beförderungskategorie** 2
 · **Tunnelbeschränkungscode** E

· **IMDG**

· **Limited quantities (LQ)** 1L
 · **Excepted quantities (EQ)** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml

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· UN "Model Regulation":	UN 1719 ÄTZENDER ALKALISCHER FLÜSSIGER STOFF, N.A.G. (KALIUMHYDROXID), 8, II, UMWELTGEFÄHRDEND
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ABSCHNITT 15: Rechtsvorschriften

· **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**

- Richtlinie 2012/18/EU
- Namentlich aufgeführte gefährliche Stoffe - ANHANG I Keiner der Inhaltsstoffe ist enthalten.
- Seveso-Kategorie E1 Gewässergefährdend
- Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der unteren Klasse 100 t
- Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der oberen Klasse 200 t
- VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII Beschränkungsbedingungen: 3

· Richtlinie 2011/65/EU zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten – Anhang II
--

Keiner der Inhaltsstoffe ist enthalten.

- VERORDNUNG (EU) 2019/1148

· Anhang I - BESCHRÄNKTE AUSGANGSSTOFFE FÜR EXPLOSIVSTOFFE (Oberer Konzentrationsgrenzwert für eine Genehmigung nach Artikel 5 Absatz 3)
--

Keiner der Inhaltsstoffe ist enthalten.

· Anhang II - MELDEPFLICHTIGE AUSGANGSSTOFFE FÜR EXPLOSIVSTOFFE

Keiner der Inhaltsstoffe ist enthalten.

· Verordnung (EG) Nr. 273/2004 betreffend Drogenausgangsstoffe
--

Keiner der Inhaltsstoffe ist enthalten.

· Verordnung (EG) Nr. 111/2005 zur Festlegung von Vorschriften für die Überwachung des Handels mit Drogenaustauschstoffen zwischen der Gemeinschaft und Drittländern
--

Keiner der Inhaltsstoffe ist enthalten.

- Nationale Vorschriften:

- Technische Anleitung Luft:

Klasse	Anteil in %
I	5,0

- Wassergefährdungsklasse: WGK 3 (Selbsteinstufung): stark wassergefährdend.

- 15.2 Stoffsicherheitsbeurteilung: Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

- Relevante Sätze

H302 Gesundheitsschädlich bei Verschlucken.

H314 Verursacht schwere Verätzungen der Haut und schwere Augenschäden.

H317 Kann allergische Hautreaktionen verursachen.

H318 Verursacht schwere Augenschäden.

H341 Kann vermutlich genetische Defekte verursachen.

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H351 Kann vermutlich Krebs erzeugen.

H400 Sehr giftig für Wasserorganismen.

Abkürzungen und Akronyme:

ADR: Accord relatif au transport international 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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Akute Toxizität – Kategorie 4

Skin Corr. 1A: Hautreizende/-ätzende Wirkung – Kategorie 1A

Eye Dam. 1: Schwere Augenschädigung/Augenreizung – Kategorie 1

Skin Sens. 1: Sensibilisierung der Haut – Kategorie 1

Muta. 2: Keimzellmutagenität – Kategorie 2

Carc. 2: Karzinogenität – Kategorie 2

Aquatic Acute 1: Gewässergefährdend - akut gewässergefährdend – Kategorie 1

DE

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 10.12.2021

Revisione: 10.12.2021

SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** R-201 DEVELOPER

· **Articolo numero:** 74961-01, 74961-10

· **UFI:** NC62-2061-U00G-DSFR

· **1.2 Usi identificati pertinenti della sostanza o della miscela e usi sconsigliati**
Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: info@emsdiasum.com

www.emsdiasum.com

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: www.sichim.com

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS08 pericolo per la salute

Muta. 2 H341 Sospettato di provocare alterazioni genetiche.

Carc. 2 H351 Sospettato di provocare il cancro.



GHS05 corrosione

Skin Corr. 1A H314 Provoca gravi ustioni cutanee e gravi lesioni oculari.

Eye Dam. 1 H318 Provoca gravi lesioni oculari.



GHS09 ambiente

Aquatic Acute 1 H400 Molto tossico per gli organismi acquatici.



GHS07

(continua a pagina 2)

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Acute Tox. 4 H302 Nocivo se ingerito.

Skin Sens. 1 H317 Può provocare una reazione allergica cutanea.

2.2 Elementi dell'etichetta**Etichettatura secondo il regolamento (CE) n. 1272/2008**

Il prodotto è classificato ed etichettato conformemente al regolamento CLP.

Pittogrammi di pericolo

GHS05 GHS07 GHS08 GHS09

Avvertenza Pericolo**Componenti pericolosi che ne determinano l'etichettatura:**

idrossido di potassio

1,4-idrossibenzene

Indicazioni di pericolo

H302 Nocivo se ingerito.

H314 Provoca gravi ustioni cutanee e gravi lesioni oculari.

H317 Può provocare una reazione allergica cutanea.

H341 Sospettato di provocare alterazioni genetiche.

H351 Sospettato di provocare il cancro.

H400 Molto tossico per gli organismi acquatici.

Consigli di prudenza

P303+P361+P353 IN CASO DI CONTATTO CON LA PELLE (o con i capelli): togliersi di dosso immediatamente tutti gli indumenti contaminati. Sciacquare la pelle [o fare una doccia].

P305+P351+P338 IN CASO DI CONTATTO CON GLI OCCHI: sciacquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciacquare.

P310 Contattare immediatamente un CENTRO ANTIVELENI/un medico.

P321 Trattamento specifico (vedere su questa etichetta).

P362+P364 Togliere tutti gli indumenti contaminati e lavarli prima di indossarli nuovamente.

P405 Conservare sotto chiave.

P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

2.3 Altri pericoli**Risultati della valutazione PBT e vPvB****PBT:** Non applicabile.**vPvB:** Non applicabile.**SEZIONE 3: Composizione/informazioni sugli ingredienti****3.2 Caratteristiche chimiche: Miscela****Descrizione:** Miscela delle seguenti sostanze con additivi non pericolosi.**Sostanze pericolose:**

CAS: 1310-58-3	idrossido di potassio	>2,5-≤10%
EINECS: 215-181-3	⚠ Skin Corr. 1A, H314; ⚠ Acute Tox. 4, H302	
CAS: 123-31-9	1,4-idrossibenzene	>2,5-≤10%
EINECS: 204-617-8	⚠ Muta. 2, H341; ⚠ Carc. 2, H351; ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; ⚠ Acute Tox. 4, H302; ⚠ Skin Sens. 1, H317	

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· **Ulteriori indicazioni:** Il testo dell'avvertenza dei pericoli citati può essere appreso dal capitolo 16

SEZIONE 4: Misure di primo soccorso

· **4.1 Descrizione delle misure di primo soccorso**

· **Indicazioni generali:**

Allontanare immediatamente gli abiti contaminati dal prodotto.

I sintomi di avvelenamento possono comparire dopo molte ore, per tale motivo è necessaria la sorveglianza di un medico nelle 48 ore successive all'incidente.

· **Inalazione:**

Portare il soggetto in zona molto ben areata e per sicurezza consultare un medico.

Se il soggetto è svenuto provvedere a tenerlo durante il trasporto in posizione stabile su un fianco.

· **Contatto con la pelle:** Lavare immediatamente con acqua e sapone sciacquando accuratamente.

· **Contatto con gli occhi:**

Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte e consultare il medico.

· **Ingestione:**

Chiamare subito il medico.

Bere abbondante acqua e sostare in zona ben areata. Richiedere immediatamente l'intervento del medico.

· **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.

· **4.3 Indicazione dell'eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**
Non sono disponibili altre informazioni.

SEZIONE 5: Misure antincendio

· **5.1 Mezzi di estinzione**

· **Mezzi di estinzione idonei:** Adottare provvedimenti antiincendio nei dintorni della zona colpita.

· **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.

· **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**

· **Mezzi protettivi specifici:** Non sono richiesti provvedimenti particolari.

SEZIONE 6: Misure in caso di rilascio accidentale

· **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza**

Indossare equipaggiamento protettivo. Allontanare le persone non equipaggiate.

· **6.2 Precauzioni ambientali:**

In caso di infiltrazione nei corpi d'acqua o nelle fognature avvertire le autorità competenti.

Diluire abbondantemente con acqua.

Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.

· **6.3 Metodi e materiali per il contenimento e per la bonifica:**

Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).

Utilizzare mezzi di neutralizzazione.

Smaltimento del materiale contaminato conformemente al punto 13.

Provvedere ad una sufficiente areazione.

· **6.4 Riferimento ad altre sezioni**

Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.

Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.

Per informazioni relative allo smaltimento vedere Capitolo 13.

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SEZIONE 7: Manipolazione e immagazzinamento

- **7.1 Precauzioni per la manipolazione sicura**
Accurata ventilazione/aspirazione nei luoghi di lavoro.
Evitare la formazione di aerosol.
- **Indicazioni in caso di incendio ed esplosione:** Non sono richiesti provvedimenti particolari.
- **7.2 Condizioni per lo stoccaggio sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Non sono richiesti requisiti particolari.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:** Mantenere i recipienti ermeticamente chiusi.
- **7.3 Usi finali particolari** Non sono disponibili altre informazioni.

SEZIONE 8: Controllo dell'esposizione/protezione individuale

- **8.1 Parametri di controllo**
- **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.

- **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:**

1310-58-3 idrossido di potassio

TWA Limite Ceiling: 2 mg/m³

123-31-9 1,4-idrossibenzene

TWA Valore a lungo termine: 1 mg/m³
A3, sen

- **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.
- **8.2 Controlli dell'esposizione**
- **Mezzi protettivi individuali:**
- **Norme generali protettive e di igiene del lavoro:**
Tenere lontano da cibo, bevande e foraggi.
Togliere immediatamente gli abiti contaminati.
Lavarsi le mani prima dell'intervallo o a lavoro terminato.
Evitare il contatto con gli occhi.
Evitare il contatto con gli occhi e la pelle.
- **Maschera protettiva:**
Nelle esposizioni brevi e minime utilizzare la maschera; nelle esposizioni più intense e durature indossare l'autorespiratore.
- **Guanti protettivi:**



Guanti protettivi

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione.
A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche.
Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.

- **Materiale dei guanti**
La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro. Poiché il prodotto rappresenta una formulazione di più sostanze, la stabilità dei materiali dei guanti non è calcolabile in anticipo e deve essere testata prima dell'impiego

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- **Tempo di permeazione del materiale dei guanti**
Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.
- **Occhiali protettivi:**



Occhiali protettivi a tenuta

SEZIONE 9: Proprietà fisiche e chimiche

· 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali

· Indicazioni generali

· Aspetto:

Forma: Liquido
Colore: Beige chiaro

· **Odore:** Inodore

· **Soglia olfattiva:** Non definito.

· **valori di pH a 20 °C:** 11

· Cambiamento di stato

Punto di fusione/punto di congelamento: Non definito.

Punto di ebollizione iniziale e intervallo di ebollizione: 100 °C

· **Punto di infiammabilità:** 165 °C

· **Infiammabilità (solidi, gas):** Non applicabile.

· **Temperatura di accensione:** 515 °C

· **Temperatura di decomposizione:** Non definito.

· **Temperatura di autoaccensione:** Prodotto non autoinfiammabile.

· **Proprietà esplosive:** Prodotto non esplosivo.

· Limiti di infiammabilità:

Inferiore: Non definito.

Superiore: Non definito.

· **Tensione di vapore:** Non definito.

· **Densità:** Non definito.

· **Densità relativa** Non definito.

· **Densità di vapore:** Non definito.

· **Velocità di evaporazione** Non definito.

· **Solubilità in/Miscibilità con acqua:**

Completamente miscibile.

· **Coefficiente di ripartizione: n-ottanolo/acqua:** Non definito.

· Viscosità:

Dinamica: Non definito.

Cinematica: Non definito.

· **Tenore del solvente:**

VOC (CE) 0,00 %

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Contenuto solido: 15,0 %

9.2 Altre informazioni Non sono disponibili altre informazioni.

SEZIONE 10: Stabilità e reattività

- **10.1 Reattività** Non sono disponibili altre informazioni.
- **10.2 Stabilità chimica**
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- **10.3 Possibilità di reazioni pericolose** Non sono note reazioni pericolose.
- **10.4 Condizioni da evitare** Non sono disponibili altre informazioni.
- **10.5 Materiali incompatibili:** Non sono disponibili altre informazioni.
- **10.6 Prodotti di decomposizione pericolosi:** Non sono noti prodotti di decomposizione pericolosi.

SEZIONE 11: Informazioni tossicologiche

· **11.1 Informazioni sugli effetti tossicologici**

· **Tossicità acuta**
Nocivo se ingerito.

· **Valori LD/LC50 rilevanti per la classificazione:**

1310-58-3 idrossido di potassio

Orale	LD50	273 mg/kg (rat)
-------	------	-----------------

123-31-9 1,4-idrossibenzene

Orale	LD50	320 mg/kg (rat)
-------	------	-----------------

· **Irritabilità primaria:**

· **Corrosione/irritazione cutanea**

Provoca gravi ustioni cutanee e gravi lesioni oculari.

· **Lesioni oculari gravi/irritazioni oculari gravi**

Provoca gravi lesioni oculari.

· **Sensibilizzazione respiratoria o cutanea**

Può provocare una reazione allergica cutanea.

· **Ulteriori dati tossicologici:**

· **Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)**

· **Mutagenicità delle cellule germinali**

Sospettato di provocare alterazioni genetiche.

· **Cancerogenicità**

Sospettato di provocare il cancro.

· **Tossicità per la riproduzione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

· **Tossicità specifica per organi bersaglio (STOT) - esposizione singola**

Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

· **Tossicità specifica per organi bersaglio (STOT) - esposizione ripetuta**

Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

· **Pericolo in caso di aspirazione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

SEZIONE 12: Informazioni ecologiche

· **12.1 Tossicità**

· **Tossicità acquatica:** Non sono disponibili altre informazioni.

· **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.

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- **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Effetti tossici per l'ambiente:**
- **Osservazioni:** Molto tossico per i pesci.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**
Pericolosità per le acque classe 3 (D) (Autoclassificazione): molto pericoloso
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature, anche in piccole dosi.
Non immettere il prodotto non diluito o non neutralizzato nelle acque di scarico e nei canali di raccolta.
Pericolo per le acque potabili anche in caso di perdite nel sottosuolo di quantità minime di prodotto.
Tossico per pesci e plancton.
Molto tossico per gli organismi acquatici
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.


SEZIONE 13: Considerazioni sullo smaltimento

- **13.1 Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.
- **Detergente consigliato:** Acqua eventualmente con l'aggiunta di detersivi.

SEZIONE 14: Informazioni sul trasporto

- | | |
|---|---|
| · 14.1 Numero ONU
· ADR, IMDG, IATA | UN1719 |
| · 14.2 Nome di spedizione dell'ONU
· ADR

· IMDG

· IATA | 1719 LIQUIDO ALCALINO CAUSTICO, N.A.S. (IDROSSIDO DI POTASSIO), PERICOLOSO PER L'AMBIENTE CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), MARINE POLLUTANT CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE) |
| · 14.3 Classi di pericolo connesso al trasporto
· ADR, IMDG | |
|  | |
| · Classe
· Etichetta | 8 Materie corrosive
8 |

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<p>· IATA</p> 	
· Class	8 Materie corrosive
· Label	8
· 14.4 Gruppo di imballaggio	II
· ADR, IMDG, IATA	II
· 14.5 Pericoli per l'ambiente:	Il prodotto contiene materie pericolose per l'ambiente: 1,4-idrossibenzene
· Marine pollutant:	Simbolo (pesce e albero)
· Marcatura speciali (ADR):	Simbolo (pesce e albero)
· 14.6 Precauzioni speciali per gli utilizzatori	Attenzione: Materie corrosive
· N° identificazione pericolo (Numero Kemler):	80
· Numero EMS:	F-A,S-B
· Segregation groups	Alkalis
· Stowage Category	A
· Segregation Code	SG22 Stow "away from" ammonium salts SG35 Stow "separated from" SGG1-acids
· 14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL ed il codice IBC	Non applicabile.
· Trasporto/ulteriori indicazioni:	
· ADR	
· Quantità limitate (LQ)	1L
· Quantità esenti (EQ)	Codice: E2 Quantità massima netta per imballaggio interno: 30 ml Quantità massima netta per imballaggio esterno: 500 ml
· Categoria di trasporto	2
· Codice di restrizione in galleria	E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1719 LIQUIDO ALCALINO CAUSTICO, N.A.S. (IDROSSIDO DI POTASSIO), 8, II, PERICOLOSO PER L'AMBIENTE

SEZIONE 15: Informazioni sulla regolamentazione

- **15.1 Disposizioni legislative e regolamentari su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**
- **Direttiva 2012/18/UE**
- **Sostanze pericolose specificate - ALLEGATO I** Nessuno dei componenti è contenuto.
- **Categoria Seveso E1** Pericoloso per l'ambiente acquatico
- **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia inferiore 100 t**

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- **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia superiore 200 t**
- **REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII Restrizioni: 3**

· **Direttiva 2011/65/UE sulla restrizione dell'uso di determinate sostanze pericolose nelle apparecchiature elettriche ed elettroniche - Allegato II**

Nessuno dei componenti è contenuto.

- **REGOLAMENTO (UE) 2019/1148**

· **Allegato I - PRECURSORI DI ESPLOSIVI SOGGETTI A RESTRIZIONI (Valore limite superiore ai fini della concessione di licenze a norma dell'articolo 5, paragrafo 3)**

Nessuno dei componenti è contenuto.

· **Allegato II - PRECURSORI DI ESPLOSIVI SOGGETTI A SEGNALAZIONE**

Nessuno dei componenti è contenuto.

· **Regolamento (CE) n. 273/2004 relativo ai precursori di droghe**

Nessuno dei componenti è contenuto.

· **Regolamento (CE) N. 111/2005 recante norme per il controllo del commercio dei precursori di droghe tra la Comunità e i paesi terzi**

Nessuno dei componenti è contenuto.

- **15.2 Valutazione della sicurezza chimica: Una valutazione della sicurezza chimica non è stata effettuata.**

SEZIONE 16: Altre informazioni

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

· Frasi rilevanti

- H302 Nocivo se ingerito.
- H314 Provoca gravi ustioni cutanee e gravi lesioni oculari.
- H317 Può provocare una reazione allergica cutanea.
- H318 Provoca gravi lesioni oculari.
- H341 Sospettato di provocare alterazioni genetiche.
- H351 Sospettato di provocare il cancro.
- H400 Molto tossico per gli organismi acquatici.

· Abbreviazioni e acronimi:

- ADR: Accord relatif au transport international 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)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 4: Tossicità acuta – Categoria 4
- Skin Corr. 1A: Corrosione/irritazione della pelle – Categoria 1A
- Eye Dam. 1: Gravi lesioni oculari/irritazione oculare – Categoria 1
- Skin Sens. 1: Sensibilizzazione della pelle – Categoria 1
- Muta. 2: Mutagenicità sulle cellule germinali – Categoria 2
- Carc. 2: Cancerogenicità – Categoria 2
- Aquatic Acute 1: Pericoloso per l'ambiente acquatico - pericolo acuto per l'ambiente acquatico – Categoria 1

물질안전보건자료 GHS에 따라라따

인쇄일자: 2021.12.10

개정: 2021.12.10

1 화학제품과 회사에 관한 정보

제품제품제명

· 제품명: **R-201 DEVELOPER**

· 상품번호: 74961-01, 74961-10

해당해당해당물질이나 혼합물(액) 관련 위험도 및 사용금지용도

· 제품의 권고 용도와 사용상의 제한사항 R-201 DEVELOPER

· 제품의 권고 용도와 사용상의 제한사항 시험실 화학약품

· 안전데이터표(Safety Data Sheet)내 공급업체 관련 정보

· 제조자/수입자/유통업체 정보

Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com

Samchang Commercial Co., Ltd.
Yeo Eui Do
PO Box 1110
Seoul, Korea
Tel: 82 2 703 3040
Fax: 82 2 717 3298

Daedok Science, Co. Ltd.
34141 E10 Korea Advanced Institute of Science
Guseong-Dong, Yuseong-gu, Daejeon,
Korea
Phone: 82 42 710 2091
Fax: 82 42 367 0005
Website: www.labsmro.com

· 추가적인 정보: 제품 안전 부서 product safety department

· 비상연락 전화번호:

ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 유해성·위험성

· 순물질 또는 혼합물(액) 분류분류



건강에 위험

생식세포 변이원성- 구분2

H341 유전적인 결함을 일으킬 것으로 의심됨

발암성 - 구분2

H351 암을 일으킬 것으로 의심됨



부식

피부 부식성/피부 자극성 - 구분 1 H314 피부에 심한 화상과 눈에 손상을 일으킴

심한 눈 손상성/눈 자극성 - 구분1 H318 눈에 심한 손상을 일으킴

(2 쪽에 계속)

물질안전보건자료

GHS에 따라

인쇄일자: 2021.12.10

개정: 2021.12.10

제품명: R-201 DEVELOPER

(1 쪽부터 계속)



환경

수생환경 유해성 - 급성 - 구분1 H400 수생생물에 매우 유독함



급성 독성 - 경구 - 구분4 H302 삼키면 유해함
피부 과민성은 - 구분1 H317 알레르기성 피부 반응을 일으킬 수 있음

- 라벨 표기 요소 요소
- 라벨 라벨 표기 요소
- 본 제품은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
- GHS 그림문자



GHS05 GHS07 GHS08 GHS09

- 신호어 위험
- 상표상에 명확히 위험성이 표시된 성분:

수산화 칼륨
하이드로퀴논

유해 유해 위험 문구

삼키면 유해함
피부에 심한 화상과 눈에 손상을 일으킴
알레르기성 피부 반응을 일으킬 수 있음
유전적인 결함을 일으킬 것으로 의심됨
암을 일으킬 것으로 의심됨
수생생물에 매우 유독함

· 예방조치문구

피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗거나 제거하십시오. 피부를 물로 씻으시오/샤워하십시오

눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면 콘택트렌즈를 제거하십시오. 계속 씻으시오.
즉시 독성물질센터/병원 연락 필요.

(라벨 참조) 처치를 하시오.

오염된 의복은 벗고 다시 사용 전 세척하십시오.

밀봉하여 저장하십시오.

(지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기하십시오.

기타 기타 유해성

- PBT(잔류성, 생물농축성, 물질분해성) 및 vPvB(고 잔류성, 고 생물농축성, 물질분해성) 평가 결과
- PBT(잔류성, 생물농축성, 물질분해성) 해당사항 없음.
- vPvB(고 잔류성, 고 생물농축성, 물질분해성) 해당사항 없음.

3 구성성분의 명칭 및 함유량

· 화학적 특성: 혼합물

설명 설명 설명한 첨가물이 함유된 아래에 열거된 물질로 만들어진 혼합물.

(3 쪽에 계속)

물질안전보건자료 GHS에 따라

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(2 쪽부터 계속)

· 위험요소요소		
1310-58-3	수산화 칼륨 ⚠️ 피부 부식성/피부 자극성 - 구분 1, H314; ⚠️ 급성 독성 - 경구 - 구분 4, H302	>2.5-≤10%
123-31-9	하이드로퀴논 ⚠️ 생식세포 변이원성 - 구분 2, H341; ⚠️ 발암성 - 구분 2, H351; ⚠️ 심한 눈 손상성/눈 자극성 - 구분 1, H318; ⚠️ 수생환경 유해성 - 급성 - 구분 1, H400; ⚠️ 급성 독성 - 경구 - 구분 4, H302; 피부 과민성은 - 구분 1, H317	>2.5-≤10%

4 응급조치 요령

- **응급조치요령 내용내용**
 - **일반정보정보**
이 제품에 의해 오염된 의상은 즉시 제거한다.
중독 증상은 몇 시간이 지난 뒤에 발생할 수 있다. 따라서 사고가 발생한 후에 적어도 48 시간 동안은 의료진의 관찰을 받아야 한다.
 - **흡입했을 때:**
신선한 공기를 쐬고 나서 반드시 의료진의 도움을 구한다.
환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.
 - **피부에 접촉했을 때:** 즉시 물과 비누로 씻고 잘 행군다.
 - **눈에 눈에 들어갔을 때:** 흐르는 물에 눈을 몇 분 동안 씻어내고 나서, 의사와 상담한다
 - **먹었을 때:**
즉시 의사의 도움을 구한다.
물을 충분히 마시고 신선한 공기를 쐬다. 즉시 의사의 도움을 구한다.
- 기타 기타 **각각**의 주의사항:
가장 가장 중요한 것은 **즉시 응급조치**에 영향을 미치는 정보가 존재하지 않습니다.
· **즉각적인 의료처리 및 특별처리가 필요함을 시사하는 징후**가 존재하지 않습니다.

5 폭발·화재시 대처방법

- **소화제**
 - **적절한 소화제:** 주변 환경에 맞는 화재 진화 방법을 사용한다.
 - **본 화학물질이나 혼합물에서 발생 가능한 특별한 위험** 추가적인 정보가 존재하지 않습니다.
 - **소방관**에 대한 **대응** 사항
- 화재 **화재**의 **진화** **조치** **방법** **보호구** 및 **예방조치:** 특별한 조치가 필요없음.

6 누출 사고 시 대처방법

- **개인적 예방조치, 보호장비 및 응급조치** 절차 **절차** 전 장비 착용하고, 무방비의 사람은 격리시킨다.
- **환경** **환경** **환경** **조치:**
하천이나 하수로 유입되었을 경우 해당 관청에 보고한다.
많은 물로 희석시킨다.
하수 도망/하수면 위 의 물/지하수로도 말하지 않게 한다.
- **밀폐** **밀폐** **밀폐** **조치** **조치** **조치**
액체가 혼합된 물질 (모래, 규조토, 산성 결합물, 일반 결합물, 톱밥)에 흡입되도록 한다.
중성제를 사용한다.
항목 13에 따라 오염된 물질을 쓰레기로 처분한다.
충분한 환기가 되도록 한다.
- **안전** **안전** **안전** **조치**
안전 관리에 대한 정보는 제7장을 참고하십시오.
개인 보호 장비에 대한 정보는 제8장을 참고하십시오.

(4 쪽에 계속)

물질안전보건자료 GHS에 따라라다

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쓰레기 처리에 대한 정보는 제13 장을 참고하십시오.

7 취급 및 저장방법

취급 취급 취급

안전 안전 안전을 위한 예방 조치

작업장에서는 통풍이 잘 되고/습기 제거가 잘 되게 주의한다.

연무질이 형성되는 것을 피한다.

화재 화재 위험을 예방하고 예방 대책에 관한 정보 정보를 별한 조치가 필요없음.

· 혼합 위험성 혼합 위험성 조건

보관 보관 보관

· 안전 방 저장 방법 별한 요구 사항이 없음.

· 하수 등 환경 환경 보전에 대한 특별한 정보 정보 없음

· 보관 조건에 관한 추가 정보 정보를 새지 않게 밀폐한 채 보관한다.

· 구체적 최종 최종 사용자 추가적인 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

· 첨단 시설 디자인에 대한 추가 정보: 더 이상 의 자료는 없음. 항목 7 을 참고하십시오.

통제 통제 통제 변수

· 화학 물질의 노출 기준, 생물학적 노출 기준 등:

1310-58-3 수산화 칼륨 칼륨

OELV (KR) 최고 노출 기준: 2 mg/m³

REL (US) 최고 노출 기준: 2 mg/m³

TLV (US) 최고 노출 기준: 2 mg/m³

123-31-9 하이드로퀴논

OELV (KR) 장기간 의 값: 2 mg/m³
발암성 2, 생식 세포 변이 원성 2

PEL (US) 장기간 의 값: 2 mg/m³

REL (US) 최고 노출 기준: 2* mg/m³
*15-min

TLV (US) 장기간 의 값: 1 mg/m³
DSEN, A3

· 추가 정보 정보 조할 당시에 유효한 목록을 기초로 사용했다.

노출 통제 통제 통제

개인 개인 개인 보호구

· 일반적 보호 조치 및 위생 조치:

식품, 음료수 와 사료로부터 멀리 떨어져 두어 놓는다.

더러워지거나 음료수가 묻은 옷은 즉시 탈의한다.

휴식 전이나 작업이 끝날 때 마다 손을 씻는다.

눈과의 접촉을 피한다.

눈과 피부와의 접촉은 피한다.

· 호흡기 보호 보호

단 시간 또는 경미한 오염의 경우에는 호흡 여과기를 사용한다. 심각한 또는 장기간 노출 시에는

호흡 보호 장비를 사용한다.

(5 쪽에 계속)

물질안전보건자료

GHS에 따라라따

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보충 보호보호



보호용 장갑

장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.
테스트를 하지 않았기 때문에 제품 / 조제 / 화학 혼합 물에 적합한 장갑재질에 대한 추천이 없다.
투과 시간, 침투율과 저하를 고려해서 장갑 재료를 선택한다.

장갑 의재료

적합한장갑의선정은재질차이뿐만아니라품질기준의차이도고려하여이루어져야하고제조업종에따라서도다르게선정되어야한다. 제품은다양한재료로부터의조제로이루어지는것이기때문에, 장갑재질의안정성은사전에예측되어질수있는것이아니고, 반드시사용전에 (그안전성이) 체크되어야한다.

장갑 재료 의 투과 시간 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.

보충 보호보호



확조이는보안경

9 물리화학적 특성

기본 정보 물리화학적 특성에 대한 정보

일반정보

외형외형외형

물리상태상태

액체

색:

연한 베이지 색

냄새냄새냄새

무취의

· 후각역치

알맞지않다.

· pH 의경우 20 °C:

11

· 상태변화

녹는점/어는점:

맞지않는

초기초기끓는점과 끓는점범위범위

100 °C

· 인화점:

165 °C

· 인화성고체고체기체

해당사항 없음.

· 점화온도:

515 °C

분해온도온도

알맞지않다.

· 자기점화:

이제품은자연발화성이없다.

· 폭발위험:

이제품은폭발위험성이없다

인화 인화 인화 폭발 폭발 위험성 상한성 한 하한

아래로:

알맞지않다.

위로위로위로

알맞지않다.

· 증기압:

알맞지않다.

밀도밀도밀도

맞지않는다.

비중비중비중

알맞지않다.

· 증기밀도:

알맞지않다.

(6 쪽에계속)

물질안전보건자료

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중발 중발 중발 속도	알맞지 않다.
· 용해도:	
· 물:	완전히 혼합할 수 있는
· n 옥탄올/물 분배계수:	알맞지 않다.
점도 점도 점도	
· 역학성:	알맞지 않다.
· 동점성:	알맞지 않다.
· 용매 내용물	
VOC (EU)	0.00 %
· 고체 양 함량 함량	15.0 %
기타 정보 정보	추가적인 정보가 존재하지 않습니다.

10 안정성 및 반응성

- 반응성 추가적인 정보가 존재하지 않습니다.
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성 / 피해 야할 조건 조건에 따라 사용 할 경우 해체는 없다
- 유해 반응 가능성 위험한 반응으로 알려지지 않았다.
- 피해 야할 조건 조건에 추가적인 정보가 존재하지 않습니다.
- 혼합 혼합 혼합 혼합 혼합 혼합 추가적인 정보가 존재하지 않습니다.
- 유해 분해 물질: 위험성 있는 분해물들은 알려지지 않았다.

11 독성에 관한 정보

· 독성학적 영향에 대한 정보
급성 독성 독성 독성

· LD/LC50-수 체에 따른 분류
1310-58-3 수산화 칼륨 칼륨
구강의 LD50 273 mg/kg (rat)
123-31-9 하이드로퀴논
구강의 LD50 320 mg/kg (rat)

· 일차적 자극 효과
피부 피부 피부 피부 또는 자극 성: 피부와 점막에 강한 부식 작용.

심한 심한 심한 심한 심한 자극 성:

- 강한 부식 작용
- 심각한 안구 상 처의 위험이 있는 강한 자극

· 감각 화: 피부 접촉을 통하여 감각 화 가능성이 있다.

· 추가적인 독성에 관한 정보

이제 제품은 유럽 공동체의 공동 분류 원칙의 합법적인 절차에 근거하여 최근에 발효된 원고에서 아래 위험들의 사전 준비에 대하여 제시하고 있다.

- 건강에 해로운
- 부식 작용의
- 자극적인

삼킬 경우 식도나 위 등의 내장 기관 벽에 상처를 주는 위험과 마찬가지로 입 주변이나 구강에 강한 부식 작용을 한다

(7 쪽에 계속)

물질안전보건자료 GHS에 따라라따

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다음다음중중의 잠재적인 효과에 대한정보
· C₁과 효과유발, 물변이성, 그리고 생생생생생
생식세포 변이원성- 구분2, 발암성 - 구분2

12 환경에 미치는 영향

독성독성독성

- 수생독성: 추가적인 정보가 존재하지 않습니다.
- 지속성 및 분해성 추가적인 정보가 존재하지 않습니다.
- 환경 시스템에서의 행동:
- 생물농축 잠재성 추가적인 정보가 존재하지 않습니다.
- 토양내 이동성 추가적인 정보가 존재하지 않습니다.

· 생태독성:

의견의견의견류 에 매우 독성임

- 추가적인 생태정보정보

일반 일반 일반 특징

수질오염등급 3 (자체등급분류): 심하게수질오염이된 지하수나, 하천으로또는 하수도망에도달하지않게한다. 역시극소수의양이라도안된다. 회석시키지않은채또는중화시키지않은채하수로나배수로에도달하지않게해야한다. 지하수로아주미세한양이유입되었을경우엔이미식수오염상태이다 하천에서는역시물고기나플랑크톤게는독성이있다. 물속의유기체에아주독이되는것

- PBT(잔류성, 생물농축성, 물질물질물질) vPvB(고 잔류성, 고 생물농축성, 물질물질물질) 결과
- PBT(잔류성, 생물농축성, 물질물질물질) 당사항 없음.
- vPvB(고 잔류성, 고 생물농축성, 물질물질물질) 당사항 없음.

기타기타 부대용 추가적인 정보가 존재하지 않습니다.

13 폐기시 주의사항

· 폐기물처리방법

권고권고권고할쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.

· 비위생적 포장포장

권고권고권고의지침에입각한쓰레기처리.

· 추천 세정제: 경우에따라서세제가첨가된물

14 운송에 필요한 정보

유엔 유엔 유엔 번호

- ADR, IMDG, IATA

UN1719

· 적정적정적정명

- ADR

1719 CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), ENVIRONMENTALLY HAZARDOUS

- IMDG

CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), MARINE POLLUTANT

- IATA

CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE)

(8 쪽에계속)

물질안전보건자료 GHS에 따라라따

인쇄일자: 2021.12.10

개정: 2021.12.10

제품명: R-201 DEVELOPER

(7 쪽부터계속)

교통 규정/유해물질 위험 클래스

· ADR, IMDG



등급 등급 등급

· 위험물 라벨라벨

8 부식작용하는물질

8

· IATA



· Class
· Label

8 부식작용하는물질

8

· 용기등급

· ADR, IMDG, IATA

II

· 환경적 유해물질:

· 해양오염물질:

특수 특수 특수 (R):

이물질은환경오염물질을함유하고있다: 하이드로퀴논

심벌 (물고기와 나무)

심벌 (물고기와 나무)

· 이동시 특별 취급 조치

위험 위험 위험 코드

· E 번호 번호 번호

· Segregation groups

· Stowage Category

· Segregation Code

경고: 부식작용하는물질

80

F-A,S-B

Alkalis

A

SG22 Stow "away from" ammonium salts

SG35 Stow "separated from" SGG1-acids

· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따

발크 발크 발크 운송 운송

해당사항 없음.

· 운송/추가정보

· ADR

한정 한정 한정 (수량)

· Excepted quantities (EQ)

1L

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

운송 운송 운송 구분

터널 터널 터널 제한 코드

2

E

· IMDG

· Limited quantities (LQ)

· Excepted quantities (EQ)

1L

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

(9 쪽에계속)

물질안전보건자료 GHS에 따라라따

인쇄일자: 2021.12.10

개정: 2021.12.10

제품명: R-201 DEVELOPER

(8 쪽부터계속)

· **UN번호** **UN 1719**

CAUSTIC ALKALI LIQUID, N.O.S.
(POTASSIUM HYDROXIDE), 8, II,
ENVIRONMENTALLY HAZARDOUS

15 법적 규제현황

· **산업안전보건법에 의한 유해화학물질 규제**

제조제조자금지물질:

어떠한내용물도목록화되어있지않다

· **허가대상물질:**

어떠한내용물도목록화되어있지않다

· **관리대상유해물질:**

모든내용물이목록화되어있다

· **작업환경측정 대상 유해인자**

1310-58-3 수산화 칼륨

1C7

123-31-9 하이드로퀴논

1A24

· **특수건강검량 대상 유해인자**

123-31-9 하이드로퀴논

1A108

해당 해당 물질 또는 혼합물에 대한 유해인자 환경영향평가정보를 법률적인 정보가 존재하지 않습니다.

· **Korean Existing Chemical Inventory**

1310-58-3 수산화 칼륨

KE-29139

123-31-9 하이드로퀴논

KE-35112

· **화학물질관리법**

· **사고대비물질**

어떠한내용물도목록화되어있지않다

· **금지물질**

어떠한내용물도목록화되어있지않다

· **제한물질**

어떠한내용물도목록화되어있지않다

· **유독물질**

모든내용물이목록화되어있다

· **허가물질**

모든내용물이목록화되어있다

등록 등록물질 또는 선제대상 화학물질

어떠한내용물도목록화되어있지않다

· **'21년까지 등록하여야 할 암, 돌연변이, 생식능력 이상을 일으킬 우려가 있는 기존화학물질**

어떠한내용물도목록화되어있지않다

· **중점관리물 질양 지정 지정**

· **표1 중점관리물질(제관전관련관련**

어떠한내용물도목록화되어있지않다

· **표2 중점관리물질(제관전관련관련**

어떠한내용물도목록화되어있지않다

(10 쪽에계속)

물질안전보건자료 GHS에 따라라따

인쇄일자: 2021.12.10

개정: 2021.12.10

제품명: R-201 DEVELOPER

(9 쪽부터계속)

- **라벨과별과발요소**
본 제품은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· GHS 그림문자



GHS05 GHS07 GHS08 GHS09

· 신호어 위험

· 상표상에명확히위험성이표시된성분:

- 수산화 칼륨
- 하이드로퀴논

유해유해위험문구

- 삼키면 유해함
- 피부에 심한 화상과 눈에 손상을 일으킴
- 알레르기성 피부 반응을 일으킬 수 있음
- 유전적인 결함을 일으킬 것으로 의심됨
- 암을 일으킬 것으로 의심됨
- 수생생물에 매우 유독함

· 예방조치문구

피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗거나 제거하십시오. 피부를 물로 씻으시오/샤워하십시오

· 눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면 콘택트렌즈를 제거하십시오. 계속 씻으시오.

즉시 독성물질센터/병원 연락 필요.

(라벨 참조) 처치를 하시오.

오염된 의복은 벗고 다시 사용 전 세척하십시오.

밀봉하여 저장 하시오.

(지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기 하시오.

- **화학물질 안전성 평가** 화학물질 안전성 평가가 수행되지 않음

16 그 밖의 참고사항

이보고는우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은 기술하지않았으며계약적인법률관계에기반을두고있지도않다

당첨당자당자

최초최초작성일자: 2021.12.10

개정개정개정수정 최종 개정일자: 1 / 2021.12.10

· 약어와 두문자어:

ADR: Accord relatif au transport international 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

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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 10.12.2021

Revisión: 10.12.2021

SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

· 1.1 Identificador del producto

· **Nombre comercial:** **R-201 DEVELOPER**

· **Número del artículo:** 74961-01, 74961-10

· **UFI:** NC62-2061-U00G-DSFR

· 1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados

No existen más datos relevantes disponibles.

· **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio

· 1.3 Datos del proveedor de la ficha de datos de seguridad

· **Fabricante/distribuidor:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: info@emsdiasum.com

www.emsdiasum.com

Aname

C/ Perez Galdos no. 2

28693 Quijorna

Madrid, Spain

Tel: +34.91.816.89.50

Fax: +34.91.816.85.94

email: ventas@aname.es

· **Área de información:** Product safety department

· 1.4 Teléfono de emergencia:

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

SECCIÓN 2: Identificación de los peligros

· 2.1 Clasificación de la sustancia o de la mezcla

· **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS08 peligro para la salud

Muta. 2

H341 Se sospecha que provoca defectos genéticos.

Carc. 2

H351 Se sospecha que provoca cáncer.



GHS05 corrosión

Skin Corr. 1A

H314 Provoca quemaduras graves en la piel y lesiones oculares graves.

Eye Dam. 1

H318 Provoca lesiones oculares graves.



GHS09 medio ambiente

Aquatic Acute 1 H400 Muy tóxico para los organismos acuáticos.

(se continua en página 2)

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 10.12.2021

Revisión: 10.12.2021

Nombre comercial: R-201 DEVELOPER

(se continua en página 1)



GHS07

Acute Tox. 4 H302 Nocivo en caso de ingestión.
Skin Sens. 1 H317 Puede provocar una reacción alérgica en la piel.

- 2.2 Elementos de la etiqueta
- **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**
El producto se ha clasificado y etiquetado de conformidad con el reglamento CLP.
- **Pictogramas de peligro**



GHS05 GHS07 GHS08 GHS09

- **Palabra de advertencia Peligro**
- **Componentes peligrosos a indicar en el etiquetaje:**
hidróxido de potasio
hidroquinona
- **Indicaciones de peligro**
H302 Nocivo en caso de ingestión.
H314 Provoca quemaduras graves en la piel y lesiones oculares graves.
H317 Puede provocar una reacción alérgica en la piel.
H341 Se sospecha que provoca defectos genéticos.
H351 Se sospecha que provoca cáncer.
H400 Muy tóxico para los organismos acuáticos.
- **Consejos de prudencia**
P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente toda la ropa contaminada. Enjuagar la piel con agua [o ducharse].
P305+P351+P338 EN CASO DE CONTACTO CON LOS OJOS: Enjuagar con agua cuidadosamente durante varios minutos. Quitar las lentes de contacto cuando estén presentes y pueda hacerse con facilidad. Proseguir con el lavado.
P310 Llamar inmediatamente a un CENTRO DE TOXICOLOGÍA/médico.
P321 Se necesita un tratamiento específico (ver en esta etiqueta).
P362+P364 Quitar las prendas contaminadas y lavarlas antes de volver a usarlas.
P405 Guardar bajo llave.
P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.
- 2.3 Otros peligros
- **Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.

SECCIÓN 3: Composición/información sobre los componentes

- 3.2 Caracterización química: Mezclas
- **Descripción:** Mezcla formada por las sustancias especificadas a continuación con adiciones no peligrosas.

(se continua en página 3)

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 10.12.2021

Revisión: 10.12.2021

Nombre comercial: R-201 DEVELOPER

(se continua en página 2)

· Componentes peligrosos:

CAS: 1310-58-3 EINECS: 215-181-3	hidróxido de potasio ⚠ Skin Corr. 1A, H314; ⚠ Acute Tox. 4, H302	>2,5-≤10%
CAS: 123-31-9 EINECS: 204-617-8	hidroquinona ⚠ Muta. 2, H341; Carc. 2, H351; ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317	>2,5-≤10%

· **Indicaciones adicionales:** El texto de los posibles riesgos aquí indicados se puede consultar en el capítulo 16.

SECCIÓN 4: Primeros auxilios

· 4.1 Descripción de los primeros auxilios

· Instrucciones generales:

Quitarse de inmediato toda prenda contaminada con el producto.

Los síntomas de intoxicación pueden presentarse después de muchas horas, por lo que se requiere una supervisión médica durante un mínimo de 48 horas después del accidente.

· En caso de inhalación del producto:

Suministrar suficiente aire fresco y, para mayor seguridad, consultar el médico.

Las personas desmayadas deben tenderse y transportarse de lado con la suficiente estabilidad.

· En caso de contacto con la piel: Lavar inmediatamente con agua y jabón y enjuagar bien.

· En caso de con los ojos:

Limpia los ojos abiertos durante varios minutos con agua corriente y consultar un médico.

· En caso de ingestión:

Consultar inmediatamente un médico.

Beber mucha agua a respirar aire fresco. Solicitar asistencia médica inmediatamente.

· 4.2 Principales síntomas y efectos, agudos y retardados No existen más datos relevantes disponibles.

· 4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente No existen más datos relevantes disponibles.

SECCIÓN 5: Medidas de lucha contra incendios

· 5.1 Medios de extinción

· **Sustancias extintoras apropiadas:** Combatir los incendios con medidas adaptados al ambiente circundante.

· **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.

· **5.3 Recomendaciones para el personal de lucha contra incendios**

· **Equipo especial de protección:** No se requieren medidas especiales.

SECCIÓN 6: Medidas en caso de vertido accidental

· 6.1 Precauciones personales, equipo de protección y procedimientos de emergencia

Llevar puesto equipo de protección. Mantener alejadas las personas sin protección.

· 6.2 Precauciones relativas al medio ambiente:

Al penetrar en las aguas o en el alcantarillado, avisar a las autoridades pertinentes.

Diluir con mucha agua.

Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.

· 6.3 Métodos y material de contención y de limpieza:

Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).

Utilizar un neutralizador.

Desechar el material contaminado como vertido según item 13.

Asegurar suficiente ventilación.

(se continua en página 4)

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 10.12.2021

Revisión: 10.12.2021

Nombre comercial: R-201 DEVELOPER

(se continua en página 3)

· 6.4 Referencia a otras secciones

- Ver capítulo 7 para mayor información sobre una manipulación segura.
- Ver capítulo 8 para mayor información sobre el equipo personal de protección.
- Para mayor información sobre cómo desechar el producto, ver capítulo 13.

SECCIÓN 7: Manipulación y almacenamiento

· 7.1 Precauciones para una manipulación segura

- Asegurar suficiente ventilación /aspiración en el puesto de trabajo.
- Evitar la formación de aerosoles.

· Prevención de incendios y explosiones: No se requieren medidas especiales.

· 7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades

· Almacenamiento:

- Exigencias con respecto al almacén y los recipientes: No se requieren medidas especiales.
- Normas en caso de un almacenamiento conjunto: No es necesario.
- Indicaciones adicionales sobre las condiciones de almacenamiento: Mantener el recipiente cerrado herméticamente.

· 7.3 Usos específicos finales No existen más datos relevantes disponibles.

SECCIÓN 8: Controles de exposición/protección individual

· 8.1 Parámetros de control

· Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:

Sin datos adicionales, ver punto 7.

· Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:

1310-58-3 hidróxido de potasio

LEP Valor de corta duración: 2 mg/m³

123-31-9 hidroquinona

LEP Valor de larga duración: 2 mg/m³
Sen

· Indicaciones adicionales: Como base se han utilizado las listas vigentes en el momento de la elaboración.

· 8.2 Controles de la exposición

· Equipo de protección individual:

· Medidas generales de protección e higiene:

- Mantener alejado de alimentos, bebidas y alimentos para animales.
- Quitarse de inmediato la ropa ensuciada o impregnada.
- Lavarse las manos antes de las pausas y al final del trabajo.
- Evitar el contacto con los ojos.
- Evitar el contacto con los ojos y la piel.

· Protección respiratoria:

Si la exposición va a ser breve o de poca intensidad, colocarse una máscara respiratoria. Para una exposición más intensa o de mayor duración, usar un aparato de respiración autónomo.

· Protección de manos:



Guantes de protección

El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.

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Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.

Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

· **Material de los guantes**

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro. Teniendo en cuenta que el producto está fabricado a partir de diferentes materiales, su calidad no puede ser evaluada de antemano, de modo que los guantes deberán ser controlados antes de su utilización.

· **Tiempo de penetración del material de los guantes**

El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

· **Protección de ojos:**



Gafas de protección herméticas

SECCIÓN 9: Propiedades físicas y químicas

· **9.1 Información sobre propiedades físicas y químicas básicas**

· **Datos generales**

· **Aspecto:**

· **Forma:**

Líquido

· **Color:**

Beige claro

· **Olor:**

Inodoro

· **Umbral olfativo:**

No determinado.

· **valor pH a 20 °C:**

11

· **Cambio de estado**

· **Punto de fusión/punto de congelación:**

Indeterminado.

· **Punto inicial de ebullición e intervalo de ebullición:** 100 °C

· **Punto de inflamación:**

165 °C

· **Inflamabilidad (sólido, gas):**

No aplicable.

· **Temperatura de ignición:**

515 °C

· **Temperatura de descomposición:**

No determinado.

· **Temperatura de auto-inflamación:**

El producto no es autoinflamable.

· **Propiedades explosivas:**

El producto no es explosivo.

· **Límites de explosión:**

· **Inferior:**

No determinado.

· **Superior:**

No determinado.

· **Presión de vapor:**

No determinado.

· **Densidad:**

Indeterminado.

· **Densidad relativa**

No determinado.

· **Densidad de vapor**

No determinado.

· **Tasa de evaporación:**

No determinado.

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· Solubilidad en / miscibilidad con agua:	Completamente mezclable.
· Coeficiente de reparto: n-octanol/agua:	No determinado.
· Viscosidad: Dinámica:	No determinado.
Cinemática:	No determinado.
· Concentración del disolvente: VOC (CE)	0,00 %
Contenido de cuerpos sólidos:	15,0 %
· 9.2 Otros datos	No existen más datos relevantes disponibles.

SECCIÓN 10: Estabilidad y reactividad

- 10.1 Reactividad No existen más datos relevantes disponibles.
- 10.2 Estabilidad química
- Descomposición térmica / condiciones que deben evitarse: No se descompone al emplearse adecuadamente.
- 10.3 Posibilidad de reacciones peligrosas No se conocen reacciones peligrosas.
- 10.4 Condiciones que deben evitarse No existen más datos relevantes disponibles.
- 10.5 Materiales incompatibles: No existen más datos relevantes disponibles.
- 10.6 Productos de descomposición peligrosos: No se conocen productos de descomposición peligrosos.

SECCIÓN 11: Información toxicológica

- 11.1 Información sobre los efectos toxicológicos
- Toxicidad aguda
Nocivo en caso de ingestión.

· Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:

1310-58-3 hidróxido de potasio

Oral	LD50	273 mg/kg (rat)
------	------	-----------------

123-31-9 hidroquinona

Oral	LD50	320 mg/kg (rat)
------	------	-----------------

- Efecto estimulante primario:
- Corrosión o irritación cutáneas
Provoca quemaduras graves en la piel y lesiones oculares graves.
- Lesiones o irritación ocular graves
Provoca lesiones oculares graves.
- Sensibilización respiratoria o cutánea
Puede provocar una reacción alérgica en la piel.
- Indicaciones toxicológicas adicionales:
- Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)
- Mutagenicidad en células germinales
Se sospecha que provoca defectos genéticos.
- Carcinogenicidad
Se sospecha que provoca cáncer.
- Toxicidad para la reproducción A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- Toxicidad específica en determinados órganos (STOT) – exposición única
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

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- **Toxicidad específica en determinados órganos (STOT) – exposición repetida**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Peligro de aspiración** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Efectos ecotóxicos:**
- **Observación:** Muy tóxico para peces.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**
Nivel de riesgo para el agua 3 (autoclasiación): muy peligroso para el agua
No dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados, ni siquiera en pequeñas cantidades.
En estado no diluido o no neutralizado, no verter en el alcantarillado o en otros sistemas de desagüe.
Una cantidad ínfima vertida en el subsuelo ya representa un peligro para el agua potable.
Vertido en aguas superficiales, también es tóxico para los peces y el plancton.
muy tóxico para organismos acuáticos
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

SECCIÓN 13: Consideraciones relativas a la eliminación

- **13.1 Métodos para el tratamiento de residuos**
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.
- **Producto de limpieza recomendado:** Agua, eventualmente añadiendo productos de limpieza.

SECCIÓN 14: Información relativa al transporte

- **14.1 Número ONU**
- **ADR, IMDG, IATA** UN1719
- **14.2 Designación oficial de transporte de las Naciones Unidas**
- **ADR** 1719 LÍQUIDO ALCALINO CÁUSTICO, N.E.P. (HIDRÓXIDO POTÁSICO), PELIGROSO PARA EL MEDIO AMBIENTE
- **IMDG** CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE), MARINE POLLUTANT
- **IATA** CAUSTIC ALKALI LIQUID, N.O.S. (POTASSIUM HYDROXIDE)

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· 14.3 Clase(s) de peligro para el transporte

· ADR, IMDG



· Clase 8 Materias corrosivas
 · Etiqueta 8

· IATA



· Class 8 Materias corrosivas
 · Label 8

· 14.4 Grupo de embalaje

· ADR, IMDG, IATA II

· 14.5 Peligros para el medio ambiente:

El producto contiene materias peligrosas para el medio ambiente: hidroquinona
 · Contaminante marino: Símbolo (pez y árbol)
 · Marcado especial (ADR): Símbolo (pez y árbol)

· 14.6 Precauciones particulares para los usuarios

Atención: Materias corrosivas
 · Número de identificación de peligro (Número Kemler): 80
 · Número EMS: F-A,S-B
 · Segregation groups: Alkalis
 · Stowage Category: A
 · Segregation Code: SG22 Stow "away from" ammonium salts
 SG35 Stow "separated from" SGG1-acids

· 14.7 Transporte a granel con arreglo al anexo II del Convenio MARPOL y el Código IBC

No aplicable.

· Transporte/datos adicionales:

· ADR
 · Cantidades limitadas (LQ) 1L
 · Cantidades exceptuadas (EQ) Código: E2
 Cantidad neta máxima por envase interior: 30 ml
 Cantidad neta máxima por embalaje exterior: 500 ml
 · Categoría de transporte 2
 · Código de restricción del túnel E

· IMDG

· Limited quantities (LQ) 1L
 · Excepted quantities (EQ) Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml

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- | | |
|--|---|
| · "Reglamentación Modelo" de la UNECE: | UN 1719 LÍQUIDO ALCALINO CÁUSTICO, N.E.P. (HIDRÓXIDO POTÁSICO), 8, II, PELIGROSO PARA EL MEDIO AMBIENTE |
|--|---|

SECCIÓN 15: Información reglamentaria

- **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**

- Directiva 2012/18/UE
- Sustancias peligrosas nominadas - ANEXO I ninguno de los componentes está incluido en una lista
- Categoría Seveso E1 Peligroso para el medio ambiente acuático
- Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel inferior 100 t
- Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel superior 200 t
- REGLAMENTO (CE) n° 1907/2006 ANEXO XVII Restricciones: 3

- Directiva 2011/65/UE sobre restricciones a la utilización de determinadas sustancias peligrosas en aparatos eléctricos y electrónicos - Anexo II

ninguno de los componentes está incluido en una lista

- REGLAMENTO (UE) 2019/1148

- Anexo I - PRECURSORES DE EXPLOSIVOS RESTRINGIDOS (Valor límite superior a efectos de la concesión de licencias con arreglo al artículo 5, apartado 3)

ninguno de los componentes está incluido en una lista

- Anexo II - PRECURSORES DE EXPLOSIVOS NOTIFICABLES

ninguno de los componentes está incluido en una lista

- Reglamento (CE) no 273/2004 sobre precursores de drogas

ninguno de los componentes está incluido en una lista

- Reglamento (CE) N o 111/2005 por el que establecen normas para la vigilancia del comercio de precursores de drogas entre la Comunidad y terceros países

ninguno de los componentes está incluido en una lista

- **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

- **Frases relevantes**

H302 Nocivo en caso de ingestión.

H314 Provoca quemaduras graves en la piel y lesiones oculares graves.

H317 Puede provocar una reacción alérgica en la piel.

H318 Provoca lesiones oculares graves.

H341 Se sospecha que provoca defectos genéticos.

H351 Se sospecha que provoca cáncer.

H400 Muy tóxico para los organismos acuáticos.

- **Abreviaturas y acrónimos:**

ADR: Accord relatif au transport international 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

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*ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Acute Tox. 4: Toxicidad aguda – Categoría 4**Skin Corr. 1A: Corrosión o irritación cutáneas – Categoría 1A**Eye Dam. 1: Lesiones oculares graves o irritación ocular – Categoría 1**Skin Sens. 1: Sensibilización cutánea – Categoría 1**Muta. 2: Mutagenicidad en células germinales – Categoría 2**Carc. 2: Carcinogenicidad – Categoría 2**Aquatic Acute 1: Peligroso para el medio ambiente acuático - peligro acuático agudo – Categoría 1*

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