according to Regulation (EC) No. 1907/2006 (REACH)



Resorcinol ≥ 99%, for biochemistry

article number: **5727**Version: **2.0 en**date of compilation: 2019-07-18
Revision: 2021-10-21

Replaces version of: 2019-07-18

Version: (1)

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

1.1 Product identifier

Identification of the substance **Resorcinol** ≥ 99%, for biochemistry

Article number 5727

Registration number (REACH)

It is not required to list the identified uses be-

cause the substance is not subject to registration

according to REACH (< 1 t/a).

Index number in CLP Annex VI 604-010-00-1 EC number 203-585-2 CAS number 108-46-3

Alternative name(s) 1,3-Dihydroxybenzene

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

Relevant identified uses: Laboratory chemical

Laboratory and analytical use

Uses advised against: Do not use for products which come into contact

with foodstuffs. Do not use for private purposes

(household).

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

Telephone:+49 (0) 721 - 56 06 0 **Telefax:** +49 (0) 721 - 56 06 149 **e-mail:** sicherheit@carlroth.de **Website:** www.carlroth.de

Competent person responsible for the safety data :Department Health, Safety and Environment

sheet:

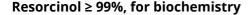
e-mail (competent person): sicherheit@carlroth.de

1.4 Emergency telephone number

| Name | Street | Postal code/city | Telephone | Website |
|--|-----------|----------------------|--------------|---------|
| National Poisons Information Service City Hospital | Dudley Rd | B187QH Birmingham | 844 892 0111 | |

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

| Section | Hazard class | Cat- egory | Hazard class and category | Hazard statement |
|---------|---|---------------|---------------------------|---------------------|
| 3.10 | Acute toxicity (oral) | 4 | Acute Tox. 4 | H302 |
| 3.2 | Skin corrosion/irritation | 2 | Skin Irrit. 2 | H315 |
| 3.3 | Serious eye damage/eye irritation | 2 | Eye Irrit. 2 | H319 |
| 4.1A | Hazardous to the aquatic environment - acute hazard | 1 | Aquatic Acute 1 | H400 |

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word Warning

Pictograms

GHS07, GHS09





Hazard statements

| H302 | Harmful if swallowed |
|------|-------------------------------|
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H400 | Very toxic to aquatic life |

Precautionary statements

Precautionary statements - prevention

P270 Do not eat, drink or smoke when using this product

P273 Avoid release to the environment

Precautionary statements - response

P302+P352 IF ON SKIN: Wash with plenty of water

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing

Labelling of packages where the contents do not exceed 125 ml

Signal word: Warning

Symbol(s)



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2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

The substance has an endocrine disrupting potential.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance Resorcinol Molecular formula $C_6H_6O_2$ Molar mass $110,1~^g/_{mol}$ CAS No 108-46-3 EC No 203-585-2 Index No 604-010-00-1

Substance, Specific Conc. Limits, M-factors, ATE

| Specific Conc. Limits | M-Factors | ATE | Exposure route |
|-----------------------|-----------|-----------------------------------|----------------|
| - | - | 510 ^{mg} / _{kg} | oral |

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Rinse mouth with water (only if the person is conscious). Call a doctor.

4.2 Most important symptoms and effects, both acute and delayed

Irritation, Nausea, Vomiting

4.3 Indication of any immediate medical attention and special treatment needed

none

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SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible. Vapours may form explosive mixtures with air.

Hazardous combustion products

In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Do not breathe dust. Avoid contact with skin and eyes.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically.

Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

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SECTION 7: Handling and storage

Precautions for safe handling

Provide adequate ventilation. Avoid dust formation. When not in use, keep containers tightly closed.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place. Keep container tightly closed.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 **Control parameters**

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

| Coun try | Name of agent | CAS No | Identifi- er | TWA [mg/ m³] | STEL [mg/ m³] | Ceil- ing-C [mg/ m³] | Nota- tion | Source |
|-------------|---------------|----------|-----------------|--------------------|---------------------|-------------------------------|---------------|------------|
| EU | resorcinol | 108-46-3 | IOELV | 45 | | | | 2006/15/EC |

Notation

Ceiling-C

Ceiling value is a limit value above which exposure should not occur

Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-

minute period (unless otherwise specified)

Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 **TWA**

hours time-weighted average (unless otherwise specified)

Human health values

Relevant DNELs and other threshold levels

| Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time | | | |
|----------|---------------------|------------------------------------|-------------------|----------------------------|--|--|--|
| DNEL | 5,6 mg/m³ | human, inhalatory | worker (industry) | chronic - systemic effects | | | |
| DNEL | 132,8 mg/m³ | human, inhalatory | worker (industry) | chronic - local effects | | | |
| DNEL | 40 mg/kg bw/ day | human, dermal | worker (industry) | chronic - systemic effects | | | |

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Environmental values

Relevant PNECs and other threshold levels

| End- point | Threshold level | Organism | Environmental com- partment | Exposure time |
|---------------|-------------------------------------|-----------------------|---------------------------------|------------------------------|
| PNEC | 0,017 ^{mg} / _l | aquatic organisms | freshwater | short-term (single instance) |
| PNEC | 0,002 ^{mg} / _l | aquatic organisms | marine water | short-term (single instance) |
| PNEC | 0,79 ^{mg} / _l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| PNEC | 0,08 ^{mg} / _{kg} | aquatic organisms | freshwater sediment | short-term (single instance) |
| PNEC | 0,008 ^{mg} / _{kg} | aquatic organisms | marine sediment | short-term (single instance) |
| PNEC | 10 ^{mg} / _{kg} | terrestrial organisms | soil | short-term (single instance) |

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection





Use safety goggle with side protection.

Skin protection





hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

type of material

NBR (Nitrile rubber)

material thickness

>0.11 mm

breakthrough times of the glove material

>480 minutes (permeation: level 6)

other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

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Respiratory protection





Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state solid
Colour whitish

Odour disagreeable - like: - Phenol

Melting point/freezing point 108 – 110 °C Boiling point or initial boiling point and boiling 277 – 280 °C

range

Flammability this material is combustible, but will not ignite

readily

Lower and upper explosion limit not determined

Flash point 127 °C (c.c.)

Auto-ignition temperature 605 °C

Decomposition temperature not relevant

pH (value) 4-6 (in aqueous solution: $100 \, {}^{9}/_{l}$, $20 \, {}^{\circ}$ C)

Kinematic viscosity not relevant

Solubility(ies)

Water solubility 717 $^{9}/_{1}$ at 25 $^{\circ}$ C (ECHA)

Partition coefficient

Partition coefficient n-octanol/water (log value): 0,8 (20 °C) (ECHA) Soil organic carbon/water (log KOC) 1,016 (ECHA)

Vapour pressure 0,001 hPa at 25 °C

Density $1,28 \, {}^{\rm g}/{}_{\rm cm^3}$ at 20 ${}^{\rm o}{\rm C}$

Relative vapour density information on this property is not available

Particle characteristics No data available.

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Oxidising properties none

9.2 Other information

Information with regard to physical hazard

classes:

hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics: There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions 10.3

Exothermic reaction with: Ammonia (NH3), Amines, Nitro compound, strong oxidiser,

Violent reaction with: Alkalis, Iron, Acetic anhydride, Acid chlorides, inorganic,

Danger of explosion: Nitric acid

10.4 Conditions to avoid

Keep away from heat.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Harmful if swallowed.

| Acute toxicity | | | | | |
|----------------|----------|-------------------------------------|---------|--------|--------|
| Exposure route | Endpoint | Value | Species | Method | Source |
| oral | LD50 | 510 ^{mg} / _{kg} | rat | | ECHA |
| dermal | LD50 | 2.830 ^{mg} / _{kg} | rabbit | | ECHA |

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

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Other safety parameters

according to Regulation (EC) No. 1907/2006 (REACH)



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Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

If swallowed

vomiting, nausea

• If in eyes

Causes serious eye irritation

If inhaled

headache, irritant effects

• If on skin

causes skin irritation

Other information

11.2 Endocrine disrupting properties

This substance is known as an "endocrine disruptor".

Endocrine disrupting chemicals (EDC)

| Name of substance | CAS No | Combined cat- egory | Human health category | Wildlife cat- egory |
|-------------------|----------|------------------------|--------------------------|------------------------|
| Resorcinol | 108-46-3 | CAT1 | CAT1 | CAT3 |

Legend

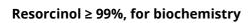
Category 1 - evidence of endocrine disruption in at least one species using intact animals Category 3 - no evidence of endocrine disruption or no data available CAT1 CAT3

11.3 Information on other hazards

There is no additional information.

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SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life.

Aquatic toxicity (acute)

| Endpoint | Value | Species | Source | Exposure time |
|----------|-----------------------------------|---------|--------|------------------|
| LC50 | 26,8 ^{mg} / _l | fish | ECHA | 96 h |
| ErC50 | >97 ^{mg} / _l | algae | ECHA | 72 h |

Aquatic toxicity (chronic)

| Endpoint | Value | Species | Source | Exposure time |
|----------|-----------------------------------|-----------------------|--------|------------------|
| EC50 | 260 ^{mg} / _l | fish | ECHA | 60 d |
| EC50 | >172 ^{µg} / _I | aquatic invertebrates | ECHA | 21 d |

Biodegradation

The substance is readily biodegradable.

12.2 Process of degradability

Theoretical Oxygen Demand: $1.890 \, ^{mg}/_{g}$ Theoretical Carbon Dioxide: $2,398 \, ^{mg}/_{mg}$

Process of degradability

| Process | Degradation rate | Time |
|----------------|------------------|------|
| biotic/abiotic | 66,7 % | 14 d |

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

| n-octanol/water (log KOW) | 0,8 (20 °C) (ECHA) |
|---------------------------|--------------------|
| BCF | 3,16 (ECHA) |

12.4 Mobility in soil

| The Organic Carbon normalised adsorption coefficient | 1,016 (ECHA) |
|--|--------------|
|--|--------------|

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

This substance is known as an "endocrine disruptor".

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Endocrine disrupting chemicals (EDC)

| Name of substance | CAS No | Combined cat- egory | Human health category | Wildlife cat- egory |
|-------------------|----------|------------------------|--------------------------|------------------------|
| Resorcinol | 108-46-3 | CAT1 | CAT1 | CAT3 |

Legend

CAT1 Category 1 - evidence of endocrine disruption in at least one species using intact animals CAT3 Category 3 - no evidence of endocrine disruption or no data available

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Waste catalogue ordinance (Germany).

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number or ID number

| ADR/RID/ADN | UN 2876 |
|-------------|---------|
| IMDG-Code | UN 2876 |
| ICAO-TI | UN 2876 |

14.2 UN proper shipping name

| ADR/RID/ADN | RESORCINOL |
|-------------|------------|
| IMDG-Code | RESORCINOL |
| ICAO-TI | Resorcinol |

14.3 Transport hazard class(es)

| ADR/RID/ADN | 6.1 |
|-------------|-----|
| IMDG-Code | 6.1 |

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ICAO-TI 6.1

14.4 Packing group

ADR/RID/ADN III
IMDG-Code III
ICAO-TI III

14.5 Environmental hazards hazardous to the aquatic environment

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

Proper shipping name RESORCINOL

Particulars in the transport document UN2876, RESORCINOL, 6.1, III, (E), environment-

ally hazardous

Classification code T2

Danger label(s) 6.1, "Fish and tree"

Environmental hazards yes (hazardous to the aquatic environment)

Special provisions (SP) 802(ADN)

Excepted quantities (EQ) E1
Limited quantities (LQ) 5 kg
Transport category (TC) 2
Tunnel restriction code (TRC) E
Hazard identification No 60
Emergency Action Code 22

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name RESORCINOL

Particulars in the shipper's declaration UN2876, RESORCINOL, 6.1, III, MARINE POLLUT-

ANT

Marine pollutant yes (hazardous to the aquatic environment)

Danger label(s) 6.1, "Fish and tree"

Special provisions (SP)

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Excepted quantities (EQ) E1

Limited quantities (LQ) 5 kg

EmS F-A, S-A

Stowage category

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name Resorcinol

Particulars in the shipper's declaration UN2876, Resorcinol, 6.1, III

Environmental hazards YES (hazardous to the aquatic environment)

Danger label(s) 6.1

Excepted quantities (EQ) E1

Limited quantities (LQ) 10 kg

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Dangerous substances with restrictions (REACH, Annex XVII)

| Name of substance | Name acc. to inventory | CAS No | Restriction | No |
|-------------------|---|--------|-------------|----|
| Resorcinol | substances in tattoo inks and permanent make-up | | R75 | 75 |

Legend

1. Shall not be placed on the market in mixtures for use for tattooing purposes, and mixtures containing any such substances shall not be used for tattooing purposes, after 4 January 2022 if the substance or substances in question is or are present in the following circumstances:
(a) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as carcinogen category

1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight; (b) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as reproductive toxicant

category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by

(c) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin sensitiser category 1, 1A or 1B, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;

(d) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2, or as serious eye damage category 1 or eye irritant category 2, the substance is present in the mixture in a concentration equal to or greater than:

(i) 0,1 % by weight, if the substance is used solely as a pH regulator,

(i) 0,1 % by weight, in all other cases; (e) in the case of a substance is deed solely as a prinegulator, (ii) 0,01 % by weight, in all other cases; (e) in the case of a substance listed in Annex II to Regulation (EC) No 1223/2009 (*1), the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight; (f) in the case of a substance for which a condition of one or more of the following kinds is specified in column g (Product type, Body parts) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight:

(ii) "Rinse-off products";
(ii) "Not to be used in products applied on mucous membranes";
(iii) "Not to be used in eye products";
(g) in the case of a substance for which a condition is specified in column h (Maximum concentration in ready for use preparation) or column i (Other) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration, or in some other way, that does not accord with the condition specified in that column; (h) in the case of a substance listed in Appendix 13 to this Annex, the substance is present in the mixture in a concentration equal to or greater than the concentration limit specified for that substance in that Appendix.

2. For the purposes of this entry use of a mixture "for tattooing purposes" means injection or introduction of the mix-

ture into a person's skin, mucous membrane or eyeball, by any process or procedure (including procedures com-

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monly referred to as permanent make-up, cosmetic tattooing, micro-blading and micro-pigmentation), with the aim of making a mark or design on his or her body.

3. If a substance not listed in Appendix 13 falls within more than one of points (a) to (g) of paragraph 1, the strictest concentration limit laid down in the points in question shall apply to that substance. If a substance listed in Appendix 13 also falls within one or more of points (a) to (g) of paragraph 1, the concentration limit laid down in point (h) of paragraph 1 shall apply to that substance.

4. By way of decoration, paragraph 1 shall not apply to the following substance until 4 leaves: 2022:

(a) Pigment Blue 15:3 (CI 74160, EC No 205-685-1, CAS No 147-14-8);
(b) Pigment Green 7 (CI 74260, EC No 215-524-7, CAS No 1328-53-6).

5. If Part 3 of Annex VI to Regulation (EC) No 1272/2008 is amended after 4 January 2021 to classify or re-classify a sub-5. If Part 3 of Annex VI to Regulation (EC) No 12/2/2008 is amended after 4 January 2021 to classify or re-classify a substance such that the substance then becomes caught by point (a), (b), (c) or (d) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the date of application of that new or revised classification is after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect on the date of application of that new or revised classification.

6. If Annex II or Annex IV to Regulation (EC) No 1223/2009 is amended after 4 January 2021 to list or change the listing of a substance such that the substance then becomes caught by point (e), (f) or (g) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the amendment takes effect after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry.

amendment takes effect after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect from the date falling 18 months after entry into force of the act by which that amendment was made.

7. Suppliers placing a mixture on the market for use for tattooing purposes shall ensure that, after 4 January 2022, the mixture is marked with the following information:

(a) the statement "Mixture for use in tattoos or permanent make-up";

(b) a reference number to uniquely identify the batch;
(c) the list of ingredients in accordance with the nomenclature established in the glossary of common ingredient names pursuant to Article 33 of Regulation (EC) No 1223/2009, or in the absence of a common ingredient name, the IUPAC name. In the absence of a common ingredient name or IUPAC name, the CAS and EC number. Ingredients shall be listed in descending order by weight or volume of the ingredients at the time of formulation. "Ingredient" means any substance added during the process of formulation and present in the mixture for use for tattooing purposes. Impurities shall not be regarded as ingredients. If the name of a substance, used as ingredient within the meaning of this entry, is already required to be stated on the label in accordance with Regulation (EC) No 1272/2008, that ingredients ent does not need to be marked in accordance with this Regulation;
(d) the additional statement "pH regulator" for substances falling under point (d)(i) of paragraph 1;
(e) the statement "Contains nickel. Can cause allergic reactions." if the mixture contains nickel below the concentra-

tion limit specified in Appendix 13;

(f) the statement "Contains chromium (VI). Can cause allergic reactions." if the mixture contains chromium (VI) below the concentration limit specified in Appendix 13;

(g) safety instructions for use insofar as they are not already required to be stated on the label by Regulation (EC) No 1272/2008.

The information shall be clearly visible, easily legible and marked in a way that is indelible.

The information shall be written in the official language(s) of the Member State(s) where the mixture is placed on the market, unless the Member State(s) concerned provide(s) otherwise.

Where necessary because of the size of the package, the information listed in the first subparagraph, except for point

(a), shall be included instead in the instructions for use.

Before using a mixture for tattooing purposes, the person using the mixture shall provide the person undergoing the procedure with the information marked on the package or included in the instructions for use pursuant to this para-

graph.

8. Mixtures that do not contain the statement "Mixture for use in tattoos or permanent make-up" shall not be used for tattooing purposes

9. This entry does not apply to substances that are gases at temperature of 20 °C and pressure of 101,3 kPa, or generate a vapour pressure of more than 300 kPa at temperature of 50 °C, with the exception of formaldehyde (CAS No 50-00-0, EC No 200-001-8).

10. This entry does not apply to the placing on the market of a mixture for use for tattooing purposes, or to the use of a mixture for tattooing purposes, when placed on the market exclusively as a medical device or an accessory to a medical device, within the meaning of Regulation (EU) 2017/745, or when used exclusively as a medical device or an accessory to a medical device, within the same meaning. Where the placing on the market or use may not be exclus ively as a medical device or an accessory to a medical device, the requirements of Regulation (EU) 2017/745 and of this Regulation shall apply cumulatively.

List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

Not listed.

Seveso Directive

| 2012/ | 18/EU (Seveso III) | | |
|-------|--|---|-------|
| No | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
| E1 | environmental hazards (hazardous to the aquatic environment, cat. 1) | 100 200 | 56) |

Notation

Hazardous to the Aquatic Environment in category Acute 1 or Chronic 1

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Deco-Paint Directive

| VOC content | 0 % , 0 ⁹ / _I |
|-------------|--|
| | |

Industrial Emissions Directive (IED)

| VOC content | 0 % |
|-------------|-------|
| VOC content | 0 g/l |

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Water Framework Directive (WFD)

List of pollutants (WFD)

| Name of substance | Name acc. to inventory | CAS No | Listed in | Remarks |
|-------------------|--|--------|-----------|---------|
| Resorcinol | Substances and preparations, or the breakdown products of such, which have been proved to pos- sess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine- related functions in or via the aquatic environment | | A) | |

Legend

A) Indicative list of the main pollutants

Regulation on the marketing and use of explosives precursors

not listed

Regulation on drug precursors

not listed

Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

not listed

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

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National inventories

| Country | Inventory | Status |
|---------|------------|---------------------|
| AU | AICS | substance is listed |
| CA | DSL | substance is listed |
| CN | IECSC | substance is listed |
| EU | ECSI | substance is listed |
| EU | REACH Reg. | substance is listed |
| JP | CSCL-ENCS | substance is listed |
| KR | KECI | substance is listed |
| MX | INSQ | substance is listed |
| NZ | NZIoC | substance is listed |
| PH | PICCS | substance is listed |
| TR | CICR | substance is listed |
| TW | TCSI | substance is listed |
| US | TSCA | substance is listed |

Legend

AICS CICR CSCL-ENCS DSL ECSI IECSC

Australian Inventory of Chemical Substances
Chemical Inventory and Control Regulation
List of Existing and New Chemical Substances (CSCL-ENCS)
Domestic Substances List (DSL)
EC Substance Inventory (EINECS, ELINCS, NLP)
Inventory of Existing Chemical Substances Produced or Imported in China
National Inventory of Chemical Substances
Korea Existing Chemicals Inventory

KECI Korea Existing Chemicals Inventory
NZIOC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg. REACH registered substances

Taiwan Chemical Substance Inventory

Toxic Substance Control Act

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

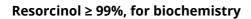
Alignment to regulation: Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU

Restructuring: section 9, section 14

| Section | Former entry (text/value) | Actual entry (text/value) | Safety- relev- ant |
|---------|---------------------------|---|--------------------------|
| 2.1 | | Classification according to Regulation (EC) No 1272/2008 (CLP): change in the listing (table) | yes |
| 2.1 | | The most important adverse physicochemical, human health and environmental effects: Spillage and fire water can cause pollution of watercourses. | yes |
| 2.2 | | Precautionary statements - prevention: change in the listing (table) | yes |

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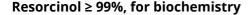
| Section | Former entry (text/value) | Actual entry (text/value) | Safety- relev- ant |
|---------|---|--|--------------------------|
| 2.3 | Other hazards: There is no additional information. | Other hazards | yes |
| 2.3 | | Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB. | yes |
| 2.3 | | Endocrine disrupting properties: The substance has an endocrine disrupting po- tential. | yes |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations | |
|-------------|---|--|
| 2006/15/EC | Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC | |
| ADN | Accord européen relatif au transport international des marchandises dangereuses par voies de naviga- tion intérieures (European Agreement concerning the International Carriage of Dangerous Goods by In- land Waterways) | |
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) | |
| ADR/RID/ADN | Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN) | |
| ATE | Acute Toxicity Estimate | |
| BCF | Bioconcentration factor | |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) | |
| Ceiling-C | Ceiling value | |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures | |
| DGR | Dangerous Goods Regulations (see IATA/DGR) | |
| DNEL | Derived No-Effect Level | |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval | |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) | |
| EINECS | European Inventory of Existing Commercial Chemical Substances | |
| ELINCS | European List of Notified Chemical Substances | |
| EmS | Emergency Schedule | |
| ErC50 | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control | |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations | |
| IATA | International Air Transport Association | |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) | |
| ICAO | International Civil Aviation Organization | |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air | |

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| Abbr. | Descriptions of used abbreviations | |
|-----------|--|--|
| IMDG | International Maritime Dangerous Goods Code | |
| IMDG-Code | International Maritime Dangerous Goods Code | |
| index No | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 | |
| IOELV | Indicative occupational exposure limit value | |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval | |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval | |
| NLP | No-Longer Polymer | |
| PBT | Persistent, Bioaccumulative and Toxic | |
| PNEC | Predicted No-Effect Concentration | |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals | |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regula- tions concerning the International carriage of Dangerous goods by Rail) | |
| STEL | Short-term exposure limit | |
| SVHC | Substance of Very High Concern | |
| TWA | Time-weighted average | |
| VOC | Volatile Organic Compounds | |
| vPvB | Very Persistent and very Bioaccumulative | |

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|------|--------------------------------|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H400 | Very toxic to aquatic life. |

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

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