

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARADUR® 3298

|         |                |              |                                 |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number:  | Date of last issue: 10.03.2020  |
| 2.0     | 15.12.2023     | 400001010246 | Date of first issue: 24.03.2017 |

Print Date 16.12.2023

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

#### 1.1 Product identifier

Trade name : ARADUR® 3298

Unique Formula Identifier (UFI) : JS9G-20GD-C001-VAC3

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

Use of the Substance/Mixture : Hardener

#### 1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe) BV

Address : Everslaan 45  
3078 Everberg  
Belgium

Telephone : +41 61 299 20 41

Telefax : +41 61 299 20 40

E-mail address of person responsible for the SDS : Global\_Product\_EHS\_AdMat@huntsman.com

#### 1.4 Emergency telephone number

Emergency telephone number : Centres Antipoison et de Toxicovigilance:

ANGERS: 02 41 48 21 21

BORDEAUX: 05 56 96 40 80

LILLE: 0 825 812 822

LYON: 04 72 11 69 11

MARSEILLE 04 91 75 25 25

NANCY: 03 83 32 36 36

PARIS: 01 40 05 48 48

RENNES: 02 99 59 22 22

STRASBOURG: 03 88 37 37 37

TOULOUSE: 05 61 77 74 47

EUROPE: +32 35 75 1234

France ORFILA: +33(0)145425959

ASIA: +65 6336-6011

China: +86 20 39377888

+86 532 83889090

India: + 91 22 42 87 5333

Australia: 1800 786 152

New Zealand: 0800 767 437

USA: +1 800-424-9300

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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

|                                                                                                            |                                                                          |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Acute toxicity, Category 4                                                                                 | H302: Harmful if swallowed.                                              |
| Acute toxicity, Category 4                                                                                 | H332: Harmful if inhaled.                                                |
| Acute toxicity, Category 4                                                                                 | H312: Harmful in contact with skin.                                      |
| Skin corrosion, Sub-category 1A                                                                            | H314: Causes severe skin burns and eye damage.                           |
| Serious eye damage, Category 1                                                                             | H318: Causes serious eye damage.                                         |
| Skin sensitisation, Category 1                                                                             | H317: May cause an allergic skin reaction.                               |
| Reproductive toxicity, Category 1B                                                                         | H360F: May damage fertility.                                             |
| Specific target organ toxicity - repeated exposure, Category 2, Liver, Kidney, Adrenal gland, Heart, Blood | H373: May cause damage to organs through prolonged or repeated exposure. |
| Long-term (chronic) aquatic hazard, Category 2                                                             | H411: Toxic to aquatic life with long lasting effects.                   |

### 2.2 Label elements

#### Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H360F May damage fertility.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**

P201 Obtain special instructions before use.  
P260 Do not breathe mist or vapours.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

#### **Response:**

P303 + P361 + P353 IF ON SKIN (or hair): Take off

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immediately all contaminated clothing. Rinse skin with water.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338 + P310 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.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P391 Collect spillage.

### Hazardous components which must be listed on the label:

Polyoxypropylenediamine  
3-aminomethyl-3,5,5-trimethylcyclohexylamine  
2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine)  
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine  
4,4'-isopropylidenediphenol

### Additional Labelling

Restricted to professional users.

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: This substance/mixture contains components considered to have endocrine disrupting properties for environment, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

Toxicological information: This substance/mixture contains components considered to have endocrine disrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Hazardous components

| Chemical name           | CAS-No.<br>EC-No.<br>Index-No.<br>Registration number | Classification                                                                                                    | Concentration<br>(% w/w) |
|-------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------|
| Polyoxypropylenediamine | 9046-10-0<br>Polymer                                  | Acute Tox. 4; H302<br>Acute Tox. 4; H312<br>Skin Corr. 1B; H314<br>Eye Dam. 1; H318<br>Aquatic Chronic 3;<br>H412 | >= 30 -<br>< 50          |

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|                                                  |                                                            |                                                                                                                                                                                                                                                                              |                 |
|--------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 3-aminomethyl-3,5,5-trimethylcyclohexylamine     | 2855-13-2<br>220-666-8<br>612-067-00-9<br>01-2119514687-32 | Acute Tox. 4; H302<br>Skin Corr. 1B; H314<br>Eye Dam. 1; H318<br>Skin Sens. 1A; H317<br><br>specific concentration limit<br>Skin Sens. 1A; H317<br>>= 0,001 %<br>Skin Sens. 1A; H317<br>>= 0,001 %<br><br>Acute toxicity estimate<br><br>Acute oral toxicity:<br>1 030 mg/kg | >= 20 -<br>< 30 |
| 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine) | 6864-37-5<br>229-962-1<br>612-110-00-1<br>01-2119497829-12 | Acute Tox. 4; H302<br>Acute Tox. 2; H330<br>Acute Tox. 3; H311<br>Skin Corr. 1A; H314<br>Eye Dam. 1; H318<br>STOT RE 2; H373<br>(Skeletal muscle, Liver, Heart, Kidney)<br>Aquatic Chronic 2; H411                                                                           | >= 20 -<br>< 25 |
| benzyl alcohol                                   | 100-51-6<br>202-859-9<br>603-057-00-5<br>01-2119492630-38  | Acute Tox. 4; H302<br>Acute Tox. 4; H332<br>Eye Irrit. 2; H319<br><br>Acute toxicity estimate<br><br>Acute oral toxicity:<br>1 620 mg/kg<br>Acute inhalation toxicity (dust/mist):<br>4,178 mg/l                                                                             | >= 1 - <<br>10  |
| 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine      | 25513-64-8<br>247-063-2<br>01-2119560598-25                | Acute Tox. 4; H302<br>Skin Corr. 1A; H314<br>Eye Dam. 1; H318<br>Skin Sens. 1A; H317<br><br>Acute toxicity estimate<br><br>Acute oral toxicity:<br>910 mg/kg                                                                                                                 | >= 1 - <<br>3   |
| 2,4,6-tris(dimethylaminomethyl)phenol            | 90-72-2<br>202-013-9<br>603-069-00-0<br>01-2119560597-27   | Acute Tox. 4; H302<br>Skin Corr. 1C; H314<br>Eye Dam. 1; H318                                                                                                                                                                                                                | >= 1 - <<br>3   |
| salicylic acid                                   | 69-72-7<br>200-712-3<br>607-732-00-5                       | Acute Tox. 4; H302<br>Eye Dam. 1; H318<br>Repr. 2; H361d                                                                                                                                                                                                                     | >= 0,1 -<br>< 1 |

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|                             |                                                          |                                                                                                                                                                                                                                                          |                     |
|-----------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                             | 01-2119486984-17                                         |                                                                                                                                                                                                                                                          |                     |
| 4,4'-isopropylidenediphenol | 80-05-7<br>201-245-8<br>604-030-00-0<br>01-2119457856-23 | Eye Dam. 1; H318<br>Skin Sens. 1; H317<br>Repr. 1B; H360F<br>STOT SE 3; H335<br>(Respiratory system)<br>Aquatic Acute 1; H400<br>Aquatic Chronic 1;<br>H410<br><br>M-Factor (Acute<br>aquatic toxicity): 1<br>M-Factor (Chronic<br>aquatic toxicity): 10 | $\geq 0,3$ -<br>< 1 |

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- General advice : Move out of dangerous area.  
Consult a physician.  
Show this safety data sheet to the doctor in attendance.  
Treat symptomatically.  
Get medical attention if symptoms occur.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing  
If potential for exposure exists refer to Section 8 for specific personal protective equipment.  
Avoid inhalation, ingestion and contact with skin and eyes.  
No action shall be taken involving any personal risk or without suitable training.  
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
If on skin, rinse well with water.  
If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.  
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Continue rinsing eyes during transport to hospital.  
Remove contact lenses.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.

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If swallowed : Keep respiratory tract clear.  
Do NOT induce vomiting.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.  
Take victim immediately to hospital.

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

Risks : Harmful if swallowed, in contact with skin or if inhaled.  
May cause an allergic skin reaction.  
Causes serious eye damage.  
May damage fertility.  
May cause damage to organs through prolonged or repeated exposure.  
Causes severe burns.

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

Treatment : Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : Exercise caution when using a high volume water jet as it may scatter and spread fire

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

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Ammonia

### 5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.  
Refer to protective measures listed in sections 7 and 8.

#### 6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.

#### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Neutralise with acid.  
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Keep in suitable, closed containers for disposal.

#### 6.4 Reference to other sections

For disposal considerations see section 13., See Section 1 for emergency contact information., For personal protection see section 8.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Advice on safe handling : Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons.  
Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.  
Do not breathe vapours/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
To avoid spills during handling keep bottle on a metal tray.  
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke.  
Wash hands before breaks and at the end of workday.

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### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Keep in properly labelled containers.

Advice on common storage : Do not store near acids.

Further information on storage stability : Stable under normal conditions.

Recommended storage temperature : 2 - 40 °C

### 7.3 Specific end use(s)

Specific use(s) : No data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

| Components                  | CAS-No.                                                                                    | Value type (Form of exposure)  | Control parameters  | Basis       |
|-----------------------------|--------------------------------------------------------------------------------------------|--------------------------------|---------------------|-------------|
| 4,4'-isopropylidenediphenol | 80-05-7                                                                                    | VME (Dust, inhalable fraction) | 2 mg/m <sup>3</sup> | FR VLE      |
| Further information         | Reprotoxic category 1B - Probably reprotoxic to humans, Regulatory binding exposure limits |                                |                     |             |
|                             |                                                                                            | TWA (inhalable fraction)       | 2 mg/m <sup>3</sup> | 2017/164/EU |
| Further information         | Indicative                                                                                 |                                |                     |             |
|                             |                                                                                            | TWA (inhalable fraction)       | 2 mg/m <sup>3</sup> | 2004/37/EC  |
| Further information         | Carcinogens or mutagens                                                                    |                                |                     |             |

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

| Substance name                                   | End Use   | Exposure routes | Potential health effects   | Value                   |
|--------------------------------------------------|-----------|-----------------|----------------------------|-------------------------|
| 3-aminomethyl-3,5,5-trimethylcyclohexylamine     | Workers   | Inhalation      | Long-term local effects    | 0,073 mg/m <sup>3</sup> |
|                                                  | Workers   | Inhalation      | Acute local effects        | 0,073 mg/m <sup>3</sup> |
|                                                  | Consumers | Oral            | Long-term systemic effects | 0,3 mg/kg bw/day        |
|                                                  | Consumers | Oral            | Acute systemic effects     | 0,3 mg/kg bw/day        |
| 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine) | Workers   | Inhalation      | Long-term systemic effects | 0,6 mg/m <sup>3</sup>   |

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|--------------------------------------------------|-----------|------------|---------------------------------------|--------------------|
|                                                  | Workers   | Inhalation | Long-term local effects               | 1 mg/m3            |
|                                                  | Workers   | Dermal     | Long-term systemic effects            | 0,05 mg/kg         |
|                                                  | Consumers | Oral       | Long-term systemic effects            | 0,008 mg/kg bw/day |
| 2,4,6-tris(dimethylaminomethyl)phenol            | Workers   | Inhalation | Long-term systemic effects            | 0,53 mg/m3         |
|                                                  | Workers   | Inhalation | Acute systemic effects                | 2,1 mg/m3          |
|                                                  | Workers   | Dermal     | Long-term systemic effects            | 0,150 mg/kg        |
|                                                  | Workers   | Dermal     | Acute systemic effects                | 0,600 mg/kg        |
|                                                  | Consumers | Inhalation | Long-term systemic effects            | 0,130 mg/m3        |
|                                                  | Consumers | Inhalation | Acute systemic effects                | 0,130 mg/m3        |
|                                                  | Consumers | Dermal     | Long-term systemic effects            | 0,075 mg/kg        |
|                                                  | Consumers | Dermal     | Acute systemic effects                | 0,075 mg/kg        |
|                                                  | Consumers | Oral       | Long-term systemic effects            | 0,075 mg/kg        |
| 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine) | Workers   | Inhalation | Long-term systemic effects            | 0,6 mg/m3          |
|                                                  | Workers   | Inhalation | Long-term local effects               | 1 mg/m3            |
|                                                  | Workers   | Dermal     | Long-term systemic effects            | 0,05 mg/kg         |
|                                                  | Consumers | Oral       | Long-term systemic effects            | 0,008 mg/kg bw/day |
| 3-aminomethyl-3,5,5-trimethylcyclohexylamine     | Workers   | Inhalation | Long-term local effects               | 0,073 mg/m3        |
|                                                  | Workers   | Inhalation | Acute local effects                   | 0,073 mg/m3        |
|                                                  | Consumers | Oral       | Long-term systemic effects            | 0,3 mg/kg bw/day   |
|                                                  | Consumers | Oral       | Acute systemic effects                | 0,3 mg/kg bw/day   |
| benzyl alcohol                                   | Workers   | Inhalation | Long-term systemic effects            | 22 mg/m3           |
|                                                  | Workers   | Inhalation | Short-term exposure, Systemic effects | 110 mg/m3          |
|                                                  | Workers   | Dermal     | Long-term systemic effects            | 8 mg/kg bw/day     |
|                                                  | Workers   | Dermal     | Short-term exposure, Systemic effects | 40 mg/kg bw/day    |
|                                                  | Consumers | Inhalation | Long-term systemic effects            | 5,4 mg/m3          |
|                                                  | Consumers | Inhalation | Short-term exposure, Systemic effects | 27 mg/m3           |

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|---------------------------------------------|-----------|------------|---------------------------------------|------------------|
|                                             | Consumers | Dermal     | Long-term systemic effects            | 4 mg/kg bw/day   |
|                                             | Consumers | Dermal     | Systemic effects, Short-term exposure | 20 mg/kg bw/day  |
|                                             | Consumers | Oral       | Long-term systemic effects            | 4 mg/kg bw/day   |
|                                             | Consumers | Oral       | Short-term exposure, Systemic effects | 20 mg/kg bw/day  |
| 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine | Consumers | Oral       | Long-term systemic effects            | 0,05 mg/kg       |
| salicylic acid                              | Workers   | Inhalation | Long-term systemic effects            | 5 mg/m3          |
|                                             | Workers   | Inhalation | Long-term local effects               | 5 mg/m3          |
|                                             | Workers   | Dermal     | Long-term systemic effects            | 2,3 mg/kg bw/day |
|                                             | Consumers | Inhalation | Long-term systemic effects            | 4 mg/m3          |
|                                             | Consumers | Dermal     | Long-term systemic effects            | 1 mg/kg bw/day   |
|                                             | Consumers | Oral       | Long-term systemic effects            | 1 mg/kg bw/day   |
|                                             | Consumers | Oral       | Acute effects, Short-term exposure    | 4 mg/kg bw/day   |
| 2,4,6-tris(dimethylaminomethyl)phenol       | Workers   | Inhalation | Long-term systemic effects            | 0,53 mg/m3       |
|                                             | Workers   | Inhalation | Acute systemic effects                | 2,1 mg/m3        |
|                                             | Workers   | Dermal     | Long-term systemic effects            | 0,150 mg/kg      |
|                                             | Workers   | Dermal     | Acute systemic effects                | 0,600 mg/kg      |
|                                             | Consumers | Inhalation | Long-term systemic effects            | 0,130 mg/m3      |
|                                             | Consumers | Inhalation | Acute systemic effects                | 0,130 mg/m3      |
|                                             | Consumers | Dermal     | Long-term systemic effects            | 0,075 mg/kg      |
|                                             | Consumers | Dermal     | Acute systemic effects                | 0,075 mg/kg      |
|                                             | Consumers | Oral       | Long-term systemic effects            | 0,075 mg/kg      |
| Polyoxypropylenediamine                     | Workers   | Inhalation | Long-term systemic effects            | 10,58 mg/m3      |
|                                             | Workers   | Dermal     | Long-term systemic effects            | 2,5 mg/kg bw/day |

**Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:**

| Substance name                               | Environmental Compartment | Value     |
|----------------------------------------------|---------------------------|-----------|
| 3-aminomethyl-3,5,5-trimethylcyclohexylamine | Fresh water               | 0,06 mg/l |
| Remarks:Assessment Factors                   |                           |           |

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|                                                  |                            |                               |
|--------------------------------------------------|----------------------------|-------------------------------|
|                                                  | Marine water               | 0,006 mg/l                    |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Sewage treatment plant     | 3,18 mg/l                     |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Fresh water sediment       | 5,784 mg/kg dry weight (d.w.) |
|                                                  | Remarks:Equilibrium method |                               |
|                                                  | Marine sediment            | 0,578 mg/kg dry weight (d.w.) |
|                                                  | Soil                       | 1,121 mg/kg dry weight (d.w.) |
|                                                  | Freshwater - intermittent  | 0,23 mg/l                     |
|                                                  | Remarks:Assessment Factors |                               |
| 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine) | Fresh water                | 0,1 mg/l                      |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Marine water               | 0,01 mg/l                     |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Freshwater - intermittent  | 0,046 mg/l                    |
|                                                  | Sewage treatment plant     | 1,6 mg/l                      |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Fresh water sediment       | 4,34 mg/kg dry weight (d.w.)  |
|                                                  | Marine sediment            | 0,434 mg/kg dry weight (d.w.) |
|                                                  | Soil                       | 4,56 mg/kg                    |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Oral                       | 0,556 mg/kg                   |
| 2,4,6-tris(dimethylaminomethyl)phenol            | Fresh water                | 0,046 mg/l                    |
|                                                  | Marine water               | 0,005 mg/l                    |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Sewage treatment plant     | 0,262 mg/l                    |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Freshwater - intermittent  | 0,46 mg/l                     |
|                                                  | Soil                       | 0,025 mg/kg                   |
| 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine) | Fresh water                | 0,1 mg/l                      |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Marine water               | 0,01 mg/l                     |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Freshwater - intermittent  | 0,046 mg/l                    |
|                                                  | Sewage treatment plant     | 1,6 mg/l                      |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Fresh water sediment       | 4,34 mg/kg dry weight (d.w.)  |
|                                                  | Marine sediment            | 0,434 mg/kg dry weight (d.w.) |
|                                                  | Soil                       | 4,56 mg/kg                    |
|                                                  | Remarks:Assessment Factors |                               |
|                                                  | Oral                       | 0,556 mg/kg                   |
| 2,4,6-tris(dimethylaminomethyl)phenol            | Fresh water                | 0,046 mg/l                    |

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|                                              |                            |                               |
|----------------------------------------------|----------------------------|-------------------------------|
|                                              | Marine water               | 0,005 mg/l                    |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Sewage treatment plant     | 0,262 mg/l                    |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Freshwater - intermittent  | 0,46 mg/l                     |
|                                              | Soil                       | 0,025 mg/kg                   |
| 3-aminomethyl-3,5,5-trimethylcyclohexylamine | Fresh water                | 0,06 mg/l                     |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Marine water               | 0,006 mg/l                    |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Sewage treatment plant     | 3,18 mg/l                     |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Fresh water sediment       | 5,784 mg/kg dry weight (d.w.) |
|                                              | Remarks:Equilibrium method |                               |
|                                              | Marine sediment            | 0,578 mg/kg dry weight (d.w.) |
|                                              | Soil                       | 1,121 mg/kg dry weight (d.w.) |
|                                              | Freshwater - intermittent  | 0,23 mg/l                     |
|                                              | Remarks:Assessment Factors |                               |
| benzyl alcohol                               | Fresh water                | 1 mg/l                        |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Marine water               | 0,1 mg/l                      |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Freshwater - intermittent  | 2,3 mg/l                      |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Sewage treatment plant     | 39 mg/l                       |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Fresh water sediment       | 5,27 mg/kg                    |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Marine sediment            | 0,527 mg/kg                   |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Soil                       | 0,456 mg/kg                   |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Secondary Poisoning        |                               |
|                                              | Remarks:Assessment Factors |                               |
| 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine  | Fresh water                | 0,102 mg/l                    |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Marine water               | 0,01 mg/l                     |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Sewage treatment plant     | 72 mg/l                       |
|                                              | Remarks:Assessment Factors |                               |
|                                              | Fresh water sediment       | 0,662 mg/kg                   |
|                                              | Marine sediment            | 0,062 mg/kg                   |
| salicylic acid                               | Marine water               | 0,02 mg/l                     |
|                                              | Sewage treatment plant     | 162 mg/l                      |
|                                              | Fresh water sediment       | 1,42 mg/kg dry weight (d.w.)  |
|                                              | Marine sediment            | 0,142 mg/kg dry weight (d.w.) |

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|                         |                            |                               |
|-------------------------|----------------------------|-------------------------------|
|                         | Soil                       | 0,166 mg/kg dry weight (d.w.) |
|                         | Secondary Poisoning        |                               |
| Polyoxypropylenediamine | Fresh water                | 0,015 mg/l                    |
|                         | Remarks:Assessment Factors |                               |
|                         | Marine water               | 0,014 mg/l                    |
|                         | Remarks:Assessment Factors |                               |
|                         | Sewage treatment plant     | 7,5 mg/l                      |
|                         | Remarks:Assessment Factors |                               |
|                         | Fresh water sediment       | 0,132 mg/kg dry weight (d.w.) |
|                         | Remarks:Equilibrium method |                               |
|                         | Marine sediment            | 0,125 mg/kg dry weight (d.w.) |
|                         | Remarks:Equilibrium method |                               |
|                         | Soil                       | 0,018 mg/kg dry weight (d.w.) |
|                         | Remarks:Equilibrium method |                               |
|                         | Oral                       | 6,93 mg/kg                    |
|                         | Freshwater - intermittent  | 0,15 mg/l                     |
|                         | Remarks:Assessment Factors |                               |

### 8.2 Exposure controls

#### Personal protective equipment

Eye/face protection : Eye wash bottle with pure water  
Tightly fitting safety goggles  
Wear face-shield and protective suit for abnormal processing problems.

Hand protection  
Material : butyl-rubber  
Break through time : > 8 h

Material : Nitrile rubber  
Break through time : 10 - 480 min

Material : Ethyl Vinyl Alcohol Laminate (EVAL)  
Break through time : > 8 h

Remarks : The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Skin and body protection : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Use respiratory protection unless adequate local exhaust

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ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines  
Equipment should conform to EN 14387

Filter type : Combined particulates, inorganic and acidic gas/vapour, ammonia/amines and organic vapour type (ABEK-P)

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                                  |                                                                                            |
|--------------------------------------------------|--------------------------------------------------------------------------------------------|
| Physical state                                   | : liquid                                                                                   |
| Colour                                           | : colourless                                                                               |
| Odour                                            | : amine-like                                                                               |
| Odour Threshold                                  | : No data is available on the product itself.                                              |
| Melting point/freezing point                     | : No data is available on the product itself.                                              |
| Boiling point                                    | : > 200 °C<br>Method: Information given is based on data obtained from similar substances. |
| Flammability (solid, gas)                        | : No data is available on the product itself.                                              |
| Lower explosion limit / Lower flammability limit | : No data is available on the product itself.                                              |
| Upper explosion limit / Upper flammability limit | : No data is available on the product itself.                                              |
| Flash point                                      | : > 100 °C<br>Method: closed cup                                                           |
| Auto-ignition temperature                        | : No data is available on the product itself.                                              |
| Decomposition temperature                        | : No data is available on the product itself.                                              |
| pH                                               | : ca. 11 (20 °C)                                                                           |
| Viscosity                                        |                                                                                            |
| Viscosity, dynamic                               | : 30 - 60 mPa.s (25 °C)<br>Method: ASTM Method, other                                      |
| Solubility(ies)                                  |                                                                                            |
| Water solubility                                 | : partly soluble (20 °C)<br>Method: Information given is based on data obtained from       |

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similar substances.

|                                        |                                               |
|----------------------------------------|-----------------------------------------------|
| Solubility in other solvents           | : No data is available on the product itself. |
| Partition coefficient: n-octanol/water | : No data is available on the product itself. |
| Vapour pressure                        | : No data is available on the product itself. |
| Density                                | : 0,9 - 1 g/cm <sup>3</sup> (25 °C)           |
| Relative density                       | : No data is available on the product itself. |
| Relative vapour density                | : No data is available on the product itself. |
| Particle characteristics               | : No data is available on the product itself. |

### 9.2 Other information

No data is available on the product itself.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No dangerous reaction known under conditions of normal use.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

### 10.4 Conditions to avoid

Conditions to avoid : None known.

### 10.5 Incompatible materials

Materials to avoid : None known.

### 10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

## SECTION 11: Toxicological information

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

#### Acute toxicity

Harmful if swallowed, in contact with skin or if inhaled.

#### Product:

Acute oral toxicity : Acute toxicity estimate: 894,04 mg/kg

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Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 1,83 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: 1 047 mg/kg  
Method: Calculation method

### **Components:**

#### **Polyoxypropylenediamine:**

Acute oral toxicity : LD50 (Rat, male): 1 099 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute dermal toxicity : LD50 (Rabbit, male and female): 1 555 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The component/mixture is moderately toxic after single contact with skin.

#### **3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

Acute oral toxicity : LD50 (Rat, male): 1 030 mg/kg  
Method: OECD Test Guideline 401  
GLP: no  
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute toxicity estimate: 1 030 mg/kg  
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : (Rat, male and female): > 5,01 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Symptoms: Breathing difficulties  
GLP: yes

Acute dermal toxicity : LD50 (Rat, male and female): > 2 000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

#### **2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):**

Acute oral toxicity : LD50 (Rat, male and female): 320 - 460 mg/kg  
Method: OECD Test Guideline 401  
GLP: no  
Assessment: The component/mixture is moderately toxic after single ingestion.

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Acute inhalation toxicity : LC50 (Rat, male and female): 0,42 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The component/mixture is highly toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit, male and female): 200 - 400 mg/kg  
Method: OECD Test Guideline 402  
GLP: no  
Assessment: The component/mixture is toxic after single contact with skin.

### benzyl alcohol:

Acute oral toxicity : LD50 (Rat, male): 1 620 mg/kg  
Method: OECD Test Guideline 401  
  
Acute toxicity estimate: 1 620 mg/kg  
Method: Calculation method

Acute inhalation toxicity : LC50 (Rat, male and female): 4,178 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
  
Acute toxicity estimate: 4,178 mg/l  
Test atmosphere: dust/mist  
Method: Calculation method

### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Acute oral toxicity : LD50 (Rat): 910 mg/kg  
Method: OECD Test Guideline 401  
  
Acute toxicity estimate: 910 mg/kg  
Method: Calculation method

### 2,4,6-tris(dimethylaminomethyl)phenol:

Acute oral toxicity : LD50 (Rat, male and female): 2 169 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The component/mixture is low toxic after single ingestion.

Acute dermal toxicity : LD50 (Rat, male): > 1 ml/kg  
Assessment: The substance or mixture has no acute dermal toxicity

### salicylic acid:

Acute oral toxicity : LD50 (Rat, male): 891 mg/kg  
Method: OECD Test Guideline 401  
GLP: no  
Assessment: The component/mixture is moderately toxic after single ingestion.

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Acute inhalation toxicity : LC50 (Rat, male): > 0,9 mg/l  
Exposure time: 1 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 2 000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes  
Assessment: The substance or mixture has no acute dermal toxicity

### 4,4'-isopropylidenediphenol:

Acute oral toxicity : LD50 (Rat, male and female): > 2 000 - < 5 000 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): > 170 mg/m3  
Exposure time: 6 h  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit, male): ca. 6 400 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

### Skin corrosion/irritation

Causes severe burns.

### Components:

#### Polyoxypropylenediamine:

Species : Rabbit  
Assessment : Causes burns.  
Method : OECD Test Guideline 404  
Result : Corrosive after 3 minutes to 1 hour of exposure

#### 3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Species : Rabbit  
Assessment : Causes burns.  
Result : Causes burns.

#### 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Species : Rabbit  
Assessment : Causes burns.  
Method : OECD Test Guideline 404  
Result : Causes burns.  
GLP : no

Species : synthetic macromolecular bio-barrier  
Assessment : Causes burns.  
Method : OECD Test Guideline 435

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Result : Causes burns.  
GLP : yes

### benzyl alcohol:

Species : Rabbit  
Assessment : No skin irritation  
Method : OECD Test Guideline 404  
Result : No skin irritation

### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Species : Rabbit  
Assessment : Causes severe burns.  
Result : Corrosive after 3 minutes or less of exposure

### 2,4,6-tris(dimethylaminomethyl)phenol:

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Corrosive after 1 to 4 hours of exposure

Species : synthetic macromolecular bio-barrier  
Method : OECD Test Guideline 435  
Result : Corrosive after 1 to 4 hours of exposure

### salicylic acid:

Species : Rabbit  
Assessment : No skin irritation  
Method : OECD Test Guideline 404  
Result : No skin irritation  
GLP : yes

### 4,4'-isopropylidenediphenol:

Species : Rabbit  
Assessment : No skin irritation  
Method : OECD Test Guideline 404  
Result : No skin irritation  
GLP : yes

### Serious eye damage/eye irritation

Causes serious eye damage.

### Components:

#### Polyoxypropylenediamine:

Assessment : Risk of serious damage to eyes.  
Result : Risk of serious damage to eyes.

#### 3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Species : Rabbit  
Assessment : Corrosive  
Method : OECD Test Guideline 405

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Result : Irreversible effects on the eye  
GLP : no

### 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Species : Rabbit  
Exposure time : 24 h  
Assessment : Risk of serious damage to eyes.  
Method : OECD Test Guideline 405  
Result : Irreversible effects on the eye  
GLP : no

### benzyl alcohol:

Species : Rabbit  
Assessment : Irritant  
Method : OECD Test Guideline 405  
Result : Irritating to eyes.

### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : Corrosive

### 2,4,6-tris(dimethylaminomethyl)phenol:

Species : Rabbit  
Assessment : Corrosive  
Method : Other guidelines  
Result : Corrosive

### salicylic acid:

Species : Rabbit  
Assessment : Risk of serious damage to eyes.  
Result : Irreversible effects on the eye

### 4,4'-isopropylidenediphenol:

Species : Rabbit  
Assessment : Risk of serious damage to eyes.  
Method : OECD Test Guideline 405  
Result : Risk of serious damage to eyes.  
GLP : yes

### Respiratory or skin sensitisation

#### Skin sensitisation

May cause an allergic skin reaction.

#### Respiratory sensitisation

Not classified due to lack of data.

### Components:

#### Polyoxypropylenediamine:

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|                 |                                                      |
|-----------------|------------------------------------------------------|
| Exposure routes | : Skin                                               |
| Species         | : Guinea pig                                         |
| Assessment      | : Did not cause sensitisation on laboratory animals. |
| Result          | : Did not cause sensitisation on laboratory animals. |

### 3-aminomethyl-3,5,5-trimethylcyclohexylamine:

|                 |                                                                     |
|-----------------|---------------------------------------------------------------------|
| Test Type       | : Maximisation Test                                                 |
| Exposure routes | : Skin                                                              |
| Species         | : Guinea pig                                                        |
| Assessment      | : Probability or evidence of high skin sensitisation rate in humans |
| Method          | : OECD Test Guideline 406                                           |
| Result          | : Probability or evidence of high skin sensitisation rate in humans |

### 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

|                 |                                                      |
|-----------------|------------------------------------------------------|
| Test Type       | : Maximisation Test                                  |
| Exposure routes | : Skin                                               |
| Species         | : Guinea pig                                         |
| Assessment      | : Did not cause sensitisation on laboratory animals. |
| Method          | : OECD Test Guideline 406                            |
| Result          | : Did not cause sensitisation on laboratory animals. |
| GLP             | : no                                                 |

### benzyl alcohol:

|                 |                                      |
|-----------------|--------------------------------------|
| Exposure routes | : Skin                               |
| Species         | : Guinea pig                         |
| Result          | : Does not cause skin sensitisation. |

### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

|                 |                                                      |
|-----------------|------------------------------------------------------|
| Exposure routes | : Skin                                               |
| Species         | : Guinea pig                                         |
| Method          | : OECD Test Guideline 406                            |
| Result          | : The product is a skin sensitiser, sub-category 1A. |

### 2,4,6-tris(dimethylaminomethyl)phenol:

|                 |                                      |
|-----------------|--------------------------------------|
| Exposure routes | : Skin                               |
| Species         | : Guinea pig                         |
| Method          | : OECD Test Guideline 406            |
| Result          | : Does not cause skin sensitisation. |

### salicylic acid:

|                 |                                      |
|-----------------|--------------------------------------|
| Test Type       | : Local lymph node assay (LLNA)      |
| Exposure routes | : Skin                               |
| Species         | : Mouse                              |
| Method          | : OECD Test Guideline 429            |
| Result          | : Does not cause skin sensitisation. |

### 4,4'-isopropylidenediphenol:

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Exposure routes : Skin  
Species : Mouse  
Assessment : Did not cause sensitisation on laboratory animals.  
Method : OECD Test Guideline 429  
Result : Did not cause sensitisation on laboratory animals.  
GLP : yes

Exposure routes : Skin  
Species : Humans  
Assessment : May cause sensitisation by skin contact.  
Result : Causes sensitisation.

### Germ cell mutagenicity

Not classified due to lack of data.

### Components:

#### **Polyoxypropylenediamine:**

Genotoxicity in vitro : Test Type: Ames test  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Result: negative

Test Type: gene mutation test  
Test system: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Result: negative

Germ cell mutagenicity- : In vitro tests did not show mutagenic effects  
Assessment

#### **3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: yes

Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative  
GLP: yes

Test Type: reverse mutation assay  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes

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Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Mouse (male and female)  
Cell type: Bone marrow  
Application Route: Oral  
Dose: 50, 150, or 500 mg/kg  
Method: OECD Test Guideline 474  
Result: negative  
GLP: yes

### 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster lung cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: yes

Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative  
GLP: yes

Test Type: Ames test  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes

### benzyl alcohol:

Genotoxicity in vivo : Application Route: Intraperitoneal injection  
Dose: 200 mg/kg  
Method: OECD Test Guideline 474  
Result: negative

### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Genotoxicity in vitro : Test Type: Ames test  
Test system: Salmonella typhimurium  
Concentration: 5000 ug/plate  
Metabolic activation: with and without metabolic activation  
Method: Directive 67/548/EEC, Annex, B.13/14  
Result: negative

Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells

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Concentration: 2 mg/ml  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

Genotoxicity in vivo : Species: Chinese hamster (male and female)  
Cell type: Bone marrow  
Application Route: Oral  
Dose: 825 - 1000 mg/kg  
Method: OECD Test Guideline 474  
Result: negative

Test Type: In vivo micronucleus test  
Species: Mouse (male and female)  
Application Route: Oral  
Dose: 850 - 1000 mg/kg  
Method: OECD Test Guideline 474  
Result: negative

### 2,4,6-tris(dimethylaminomethyl)phenol:

Genotoxicity in vitro : Concentration: 5000 ug/plate  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

Concentration: 2500 ug/plate  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative

Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

### salicylic acid:

Genotoxicity in vitro : Test Type: reverse mutation assay  
Test system: Salmonella tryphimurium and E. coli  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Test system: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: yes

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Genotoxicity in vivo : Test Type: sister chromatid exchange assay  
Species: Mouse (male)  
Cell type: Bone marrow  
Application Route: Oral  
Dose: 350 mg/kg  
Method: OPPTS 870.5915  
Result: negative

Test Type: sister chromatid exchange assay  
Species: Mouse (male)  
Cell type: Bone marrow  
Application Route: Intraperitoneal injection  
Dose: 20/50/100 mg/kg  
Method: OPPTS 870.5915  
Result: negative

Species: Mouse (male)  
Cell type: Bone marrow  
Application Route: Intraperitoneal injection  
Dose: 50/100/200 mg/kg  
Method: OECD Test Guideline 475  
Result: negative

Species: Mouse (male)  
Cell type: Bone marrow  
Application Route: Oral  
Dose: 350 mg/kg  
Method: OECD Test Guideline 475  
Result: negative

### 4,4'-isopropylidenediphenol:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Result: negative

Test Type: reverse mutation assay  
Test system: Salmonella tryphimurium and E. coli  
Metabolic activation: with and without metabolic activation  
Result: negative

Test Type: gene mutation test  
Test system: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mouse (male and female)  
Cell type: Bone marrow  
Application Route: Oral  
Dose: 0, 500, 1000, or 2000 mg/kg  
Result: negative

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### Carcinogenicity

Not classified due to lack of data.

### Components:

#### benzyl alcohol:

|                        |                           |
|------------------------|---------------------------|
| Species                | : Rat, male and female    |
| Application Route      | : Oral                    |
| Exposure time          | : 103 weeks               |
| Dose                   | : 400 mg/kg               |
| Frequency of Treatment | : 5 daily                 |
| Method                 | : OECD Test Guideline 453 |
| Result                 | : negative                |

#### salicylic acid:

|                        |                                                                        |
|------------------------|------------------------------------------------------------------------|
| Species                | : Rat, male and female                                                 |
| Application Route      | : Oral                                                                 |
| Exposure time          | : 24 month(s)                                                          |
| Dose                   | : 0,50,250,500,1000 mg/kg                                              |
| Frequency of Treatment | : 7 daily                                                              |
| NOAEL                  | : 500 mg/kg bw/day                                                     |
| Result                 | : negative                                                             |
| Remarks                | : Information given is based on data obtained from similar substances. |

#### 4,4'-isopropylidenediphenol:

|                        |                        |
|------------------------|------------------------|
| Species                | : Rat, male and female |
| Application Route      | : Oral                 |
| Exposure time          | : 103 weeks            |
| Frequency of Treatment | : 7 daily              |
| Result                 | : negative             |
| GLP                    | : yes                  |

### Reproductive toxicity

May damage fertility.

### Components:

#### 3-aminomethyl-3,5,5-trimethylcyclohexylamine:

|                      |                                                        |
|----------------------|--------------------------------------------------------|
| Effects on fertility | : Species: Rat, male and female                        |
|                      | Application Route: Oral                                |
|                      | Dose: 0/25/80/240 mg/kg bw/day                         |
|                      | Frequency of Treatment: 7 days/week                    |
|                      | General Toxicity - Parent: NOAEL: 80 mg/kg body weight |
|                      | General Toxicity F1: NOAEL: > 160 mg/kg body weight    |
|                      | Method: OECD Test Guideline 443                        |
|                      | GLP: yes                                               |

|                               |                                                       |
|-------------------------------|-------------------------------------------------------|
| Effects on foetal development | : Test Type: Pre-natal                                |
|                               | Species: Rat, female                                  |
|                               | Application Route: Oral                               |
|                               | Dose: 10/50/250 milligram per kilogram                |
|                               | Duration of Single Treatment: 14 d                    |
|                               | General Toxicity Maternal: NOEL: 50 mg/kg body weight |

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Method: OECD Test Guideline 414

Result: No teratogenic effects

GLP: yes

Test Type: Pre-natal

Species: Rabbit, female

Application Route: Oral

Dose: 0/10/25/75 mg/kg bw/d

Duration of Single Treatment: 23 d

General Toxicity Maternal: NOAEL: 25 mg/kg body weight

Teratogenicity: NOAEL: > 250 mg/kg body weight

Developmental Toxicity: NOAEL: > 75 mg/kg body weight

Method: OECD Test Guideline 414

GLP: yes

### 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Dose: 1.5/5/15 mg/kg bw/d  
General Toxicity - Parent: NOAEL: 1,5 mg/kg body weight  
Method: OECD Test Guideline 443  
GLP: yes

Effects on foetal development : Test Type: Pre-natal  
Species: Rat, female  
Application Route: Oral  
Dose: 5, 15 and 45 mg/kg bw /day  
Duration of Single Treatment: 20 d  
Frequency of Treatment: 7 days/week  
General Toxicity Maternal: NOAEL: 5 mg/kg body weight  
Developmental Toxicity: NOAEL: 45 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects  
GLP: yes

Test Type: Pre-natal

Species: Rabbit, female

Application Route: Oral

Dose: 1/3/9 mg/kg bw/d

Duration of Single Treatment: 23 d

Frequency of Treatment: 7 days/week

General Toxicity Maternal: NOAEL: 1 mg/kg body weight

Developmental Toxicity: NOAEL: 9 mg/kg body weight

Method: OECD Test Guideline 414

GLP: yes

### benzyl alcohol:

Effects on foetal development : Species: Mouse, female  
Application Route: Oral  
General Toxicity Maternal: LOAEL: 550 mg/kg body weight  
Result: No teratogenic effects

### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

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Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Dose: 10, 60, 120 mg/kg bw/day  
Method: OECD Test Guideline 416  
Result: No effects on fertility and early embryonic development were detected.

Effects on foetal development : Species: Rabbit, female  
Application Route: Oral  
General Toxicity Maternal: NOAEL: 50 000 ppm  
Result: No teratogenic effects

### **2,4,6-tris(dimethylaminomethyl)phenol:**

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Method: OECD Test Guideline 422  
Remarks: No significant adverse effects were reported

### **salicylic acid:**

Effects on foetal development : Species: Rabbit, female  
Application Route: Oral  
Duration of Single Treatment: 3 - 13 d  
General Toxicity Maternal: NOAEL: 125 mg/kg body weight  
Developmental Toxicity: NOAEL: 250 mg/kg body weight  
Method: OECD Test Guideline 414  
Remarks: Information given is based on data obtained from similar substances.

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

### **4,4'-isopropylidenediphenol:**

Effects on fertility : Test Type: Two-generation study  
Species: Rat, male and female  
Application Route: Oral  
Dose: 0, 0.2, 2, 20, and 200 µg/kg  
General Toxicity - Parent: NOAEL: 0,2 mg/kg body weight  
General Toxicity F1: NOAEL: 0,2 mg/kg body weight  
General Toxicity F2: NOAEL: 0,2 mg/kg body weight  
Method: OECD Test Guideline 416  
Result: Embryotoxic effects and adverse effects on the offspring were detected.  
GLP: yes

Species: Rat, male and female  
General Toxicity - Parent: NOAEL: 2,7 mg/kg body weight  
General Toxicity F1: NOAEL: 2,7 mg/kg body weight  
GLP: yes

Effects on foetal development : Species: Rat, female  
Application Route: Oral  
General Toxicity Maternal: NOAEL: 0,2 mg/kg body weight  
Method: OECD Test Guideline 416

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Result: No teratogenic effects

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, based on animal experiments.

### STOT - single exposure

Not classified due to lack of data.

#### Components:

##### **4,4'-isopropylidenediphenol:**

Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

### STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

#### Components:

##### **2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):**

Exposure routes : Ingestion  
Target Organs : Skeletal muscle, Liver, Heart, Kidney  
Assessment : May cause damage to organs through prolonged or repeated exposure., The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

### Repeated dose toxicity

#### Components:

##### **Polyoxypropylenediamine:**

Species : Rat, male and female  
NOAEL : 300 mg/kg/d  
Application Route : Skin contact  
Exposure time : 90 d 6 h  
Method : Subchronic toxicity

##### **3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

Species : Rat, male and female  
NOAEL : 59 - 62 mg/kg  
LOAEL : 160 mg/kg  
Application Route : oral (drinking water)  
Exposure time : 90 d  
Number of exposures : daily  
Dose : 20, 60, 160 mg/kg  
Method : OECD Test Guideline 408  
Target Organs : Kidney

Species : Rat, male and female  
NOEC : 200 mg/m<sup>3</sup>  
Application Route : Inhalation  
Test atmosphere : dust/mist  
Exposure time : 216 h

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Number of exposures : 6h  
Method : Subacute toxicity  
Target Organs : respiratory tract irritation

### 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Species : Rat, male and female  
NOEC : 12 mg/m3  
Application Route : Inhalation  
Test atmosphere : vapour  
Exposure time : 6 h  
Number of exposures : 5 days/week  
Method : OECD Test Guideline 413  
GLP : yes

Species : Rat, male and female  
NOAEL : 2,5 mg/kg  
Application Route : oral (gavage)  
Exposure time : 3 months  
Number of exposures : 5 days/week  
Dose : 2.5, 12, 60 mg/kg bw/day  
Method : OECD Test Guideline 408  
GLP : yes  
Target Organs : Liver, Kidney, Skeletal muscle, Heart

### benzyl alcohol:

Species : Rat, male and female  
NOEC : 400 mg/kg, 1072 mg/m3  
Application Route : Inhalation  
Test atmosphere : dust/mist  
Exposure time : 4 Weeks  
Number of exposures : 6 h  
Method : OECD Test Guideline 412

### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Species : Rat, male and female  
NOAEL : 10 mg/kg bw/day  
Application Route : Ingestion  
Exposure time : 13 Weeks  
Number of exposures : Daily  
Dose : 10, 60, 180mg/kg bw  
Target Organs : Liver

Species : Rat, male and female  
LOAEL : 60 mg/kg bw/day  
Application Route : Ingestion  
Exposure time : 13 Weeks  
Number of exposures : Daily  
Dose : 10, 60, 180mg/kg bw  
Target Organs : Liver

### 2,4,6-tris(dimethylaminomethyl)phenol:

Species : Rat, male and female

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NOEL : 15 mg/kg  
Application Route : Ingestion  
Exposure time : 1 032 h  
Number of exposures : 7 d  
Method : Subacute toxicity

### salicylic acid:

Species : Rat, male and female  
NOAEL : 50 mg/kg  
Application Route : oral (feed)  
Exposure time : 2 yr  
Number of exposures : 7 d  
Dose : 0, 50, 250, 500, 1000 mg/kg bw  
Method : Chronic toxicity  
Remarks : Information given is based on data obtained from similar substances.

Species : Rat, female  
NOEC : 700 mg/m3  
Application Route : inhalation (vapour)  
Exposure time : 7 h 4 Weeks  
Number of exposures : 5 days/week  
Dose : 635 mg/m3  
Method : OECD Test Guideline 412  
GLP : no  
Remarks : Information given is based on data obtained from similar substances.

### 4,4'-isopropylidenediphenol:

Species : Mouse, male and female  
NOAEL : 300 ppm  
Application Route : oral (feed)  
Exposure time : 8 weeks  
Number of exposures : 7 days/week  
Dose : 0.018, 0.18, 1.8, 30, 300, 3500 ppm  
Method : OECD Test Guideline 416  
GLP : yes

Species : Rat, male and female  
NOEL : 75 ppm  
NOAEL : 750 ppm  
Application Route : oral (feed)  
Number of exposures : 7 days/week  
Dose : 0, 0.015, 0.3, 4.5, 75, 750, 7500 ppm  
Method : OECD Test Guideline 416  
GLP : yes

Species : Rat, male and female  
LOAEL : 600 mg/kg  
Application Route : oral (gavage)  
Exposure time : 28 d  
Number of exposures : 7 days/week  
Dose : 0, 40, 200, 600 1000 mg/kg-day  
Method : OECD Test Guideline 407

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|                     |   |                                     |
|---------------------|---|-------------------------------------|
| GLP                 | : | yes                                 |
| Species             | : | Rat, male and female                |
| NOEC                | : | 10 mg/m <sup>3</sup>                |
| Application Route   | : | inhalation (dust/mist/fume)         |
| Exposure time       | : | 13 weeks 6 h                        |
| Number of exposures | : | 5 days/week                         |
| Dose                | : | 0, 10, 50, or 150 mg/m <sup>3</sup> |
| Species             | : | Rat, male and female                |
| NOAEL               | : | 90 mg/m <sup>3</sup>                |
| Application Route   | : | inhalation (dust/mist/fume)         |
| Exposure time       | : | 8 weeks 6 h                         |
| Number of exposures | : | 5 days/week                         |
| Dose                | : | 10/30/90 mg/m <sup>3</sup>          |

### Aspiration toxicity

Not classified due to lack of data.

## 11.2 Information on other hazards

### Endocrine disrupting properties

#### Product:

Assessment : This substance/mixture contains components considered to have endocrine disrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

### Experience with human exposure

No data available

### Toxicology, Metabolism, Distribution

No data available

### Neurological effects

No data available

### Further information

No data available

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

#### **Polyoxypropylenediamine:**

|                                                     |   |                                                                                                                                   |
|-----------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 15 mg/l<br>End point: Immobilization<br>Exposure time: 48 h<br>Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants                    | : | IC50 (Scenedesmus subspicatus): 135 mg/l<br>Exposure time: 72 h                                                                   |

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Test substance: Fresh water  
Method: OECD Test Guideline 201

### Ecotoxicology Assessment

Acute aquatic toxicity : Harmful to aquatic life.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

### 3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 110 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: semi-static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.1.  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 23 mg/l  
End point: mortality  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 50 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: no  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.3.  
GLP: yes

EC10 (Desmodesmus subspicatus (green algae)): 11,2 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: no  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.3.  
GLP: yes

Toxicity to microorganisms : EC10 (Pseudomonas putida): 1 120 mg/l  
Exposure time: 18 h  
Test Type: static test  
Method: Measured

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 3 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Analytical monitoring: yes  
Test substance: Fresh water

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Method: OECD Test Guideline 202

Remarks: No-observed-effect level

### 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Toxicity to fish : LC50 (*Oryzias latipes* (Orange-red killifish)): 22,4 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: semi-static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 4,57 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic plants : EC50 (*Pseudokirchneriella subcapitata* (green algae)): 7,9 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 201  
GLP: yes

EC10 (*Pseudokirchneriella subcapitata* (green algae)): 4,1 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 201  
GLP: yes

Toxicity to microorganisms : EC20 (activated sludge): 160 mg/l  
Exposure time: 30 min  
Test Type: static test  
Analytical monitoring: no  
Method: ISO 8192  
GLP: no

Toxicity to fish (Chronic toxicity) : NOEC: > 1 mg/l  
Species: Fish  
Method: QSAR  
GLP: no  
Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 4 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 211  
GLP: yes

### Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

#### benzyl alcohol:

Toxicity to fish : LC50 : 460 mg/l  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water  
Method: OPPTS 850.1075

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 230 mg/l  
Exposure time: 48 h  
Test substance: Fresh water  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EgC50 (Selenastrum capricornutum (green algae)): 770 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 51 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 211

#### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 174 mg/l  
Exposure time: 48 h  
Method: DIN 38412

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31,5 mg/l  
Exposure time: 24 h  
Method: DIN 38412

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (algae)): 43,5 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

EC50 (Pseudokirchneriella subcapitata (algae)): 37,1 mg/l  
Exposure time: 72 h

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Method: OECD Test Guideline 201

NOEC (*Pseudokirchneriella subcapitata* (algae)): 16 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to microorganisms : IC50 (*Pseudomonas putida*): 89 mg/l  
Exposure time: 17 h

Toxicity to fish (Chronic toxicity) : NOEC: 10,9 mg/l  
Exposure time: 30 d  
Species: *Brachydanio rerio* (zebrafish)  
Method: OECD Test Guideline 210

Lowest Observed Effect Concentration: 10,9 mg/l

Exposure time: 30 d

Species: *Brachydanio rerio* (zebrafish)

Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 1,02 mg/l  
Exposure time: 21 d  
Species: *Daphnia magna* (Water flea)  
Method: OECD Test Guideline 211

Lowest Observed Effect Concentration: 1,02 mg/l

Exposure time: 21 d

Species: *Daphnia magna* (Water flea)

Method: OECD Test Guideline 211

Toxicity to soil dwelling organisms : NOEC:  $\geq 1\,000$  mg/kg  
Exposure time: 56 d  
Species: *Eisenia fetida* (earthworms)  
Method: OECD Test Guideline 222

EC50:  $\geq 1\,000$  mg/kg

Exposure time: 56 d

Species: *Eisenia fetida* (earthworms)

Method: OECD Test Guideline 222

### 2,4,6-tris(dimethylaminomethyl)phenol:

Toxicity to fish : LC50 (*Cyprinus carpio* (Carp)): 175 mg/l  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates : LC50 (*Palaeomonetes vulgaris* (Grass shrimp)): 718 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: static test  
Analytical monitoring: no  
Test substance: Marine water

Toxicity to algae/aquatic plants : ErC50 (*Desmodesmus subspicatus* (green algae)): 84 mg/l  
Exposure time: 72 h

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Test Type: static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 201

NOEC (Desmodesmus subspicatus (green algae)): 6,25 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 201

### salicylic acid:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 1 370 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 203  
GLP: no  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 870 mg/l  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to microorganisms : NOEC (Pseudomonas putida): 162 mg/l  
Exposure time: 16 h  
Test Type: static test  
Test substance: Fresh water  
Method: ISO Method, other  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 10 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 202

### 4,4'-isopropylidenediphenol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 4,6 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: flow-through test  
Analytical monitoring: yes  
Test substance: Fresh water

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Method: ASTM Method, other

GLP: yes

LC50 (*Oryzias latipes* (Orange-red killifish)): 6,8 mg/l

End point: mortality

Exposure time: 72 h

Test substance: Fresh water

Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates :

EC50 (*Daphnia magna* (Water flea)): 10,2 mg/l

End point: Immobilization

Exposure time: 48 h

Test Type: static test

Analytical monitoring: yes

Test substance: Fresh water

Method: Other guidelines

GLP: yes

EC50 (*Chironomus* sp. (midge)): 2,7 mg/l

End point: Immobilization

Exposure time: 96 h

Test Type: semi-static test

Analytical monitoring: yes

Test substance: Fresh water

Method: Other guidelines

GLP: yes

EC50 (*Acartia tonsa*): 0,885 mg/l

Exposure time: 48 h

Method: Measured

Toxicity to algae/aquatic plants :

EbC50 (*Pseudokirchneriella subcapitata* (green algae)): 2,73 mg/l

Exposure time: 96 h

Test Type: static test

Analytical monitoring: yes

Test substance: Fresh water

GLP: yes

EC10 (*Pseudokirchneriella subcapitata* (green algae)): 1,41 mg/l

Exposure time: 96 h

Test Type: static test

Analytical monitoring: yes

Test substance: Fresh water

GLP: yes

EC50 (*Lemna minor* (duckweed)): 20 mg/l

Exposure time: 7 d

Test Type: semi-static test

Analytical monitoring: yes

Test substance: Fresh water

Method: OECD Test Guideline 221

GLP: yes

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NOEC (Lemna minor (duckweed)): 7,8 mg/l  
Exposure time: 7 d  
Test Type: semi-static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 221  
GLP: yes

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC:  $\geq 0,640$  mg/l  
Exposure time: 36 d  
Species: Pimephales promelas (fathead minnow)  
Test Type: flow-through test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 210  
GLP: yes

NOEC: 0,000372 mg/l  
Exposure time: 300 d  
Species: Danio rerio (zebra fish)  
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,025 mg/l  
Exposure time: 181 d  
Test Type: flow-through test  
Analytical monitoring: yes  
Test substance: Fresh water  
GLP: yes

M-Factor (Chronic aquatic toxicity) : 10

### 12.2 Persistence and degradability

#### Components:

##### **3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

Biodegradability : Test Type: aerobic  
Inoculum: activated sludge  
Concentration: 6,9 mg/l  
Result: Not readily biodegradable.  
Biodegradation: 8 %  
Related to: Dissolved organic carbon (DOC)  
Exposure time: 28 d  
Method: Directive 67/548/EEC Annex V, C.4.A.  
Test substance: Fresh water  
GLP: yes

##### **2,2'-dimethyl-4,4'-methylenbis(cyclohexylamine):**

Biodegradability : Test Type: aerobic  
Inoculum: Sewage (STP effluent)  
Concentration: 100 mg/l

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Result: Not readily biodegradable.  
Biodegradation: 0 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301C  
Test substance: Fresh water  
GLP: yes

### benzyl alcohol:

Biodegradability : Inoculum: Sewage (STP effluent)  
Concentration: 20 mg/l  
Result: Readily biodegradable.  
Biodegradation: 95 - 97 %  
Exposure time: 21 d  
Method: OECD Test Guideline 301A

### 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Biodegradability : Inoculum: activated sludge  
Concentration: 11,4 mg/l  
Result: Not readily biodegradable.  
Biodegradation: 7 %  
Exposure time: 28 d

### 2,4,6-tris(dimethylaminomethyl)phenol:

Biodegradability : Test Type: aerobic  
Inoculum: activated sludge, non-adapted  
Concentration: 2 mg/l  
Result: Not biodegradable  
Biodegradation: 4 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D

### salicylic acid:

Biodegradability : Test Type: aerobic  
Inoculum: Mixture  
Concentration: 100 mg/l  
Result: Readily biodegradable.  
Biodegradation: 88,1 %  
Related to: Biochemical oxygen demand  
Exposure time: 14 d  
Method: OECD Test Guideline 301C  
GLP: No information available.

Test Type: aerobic  
Inoculum: activated sludge, non-adapted  
Result: Inherently biodegradable.  
Biodegradation: > 90 %  
Related to: Dissolved organic carbon (DOC)  
Exposure time: 4 d  
Method: Directive 67/548/EEC, Annex V, C.9  
GLP: no

### 4,4'-isopropylidenediphenol:

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Biodegradability : Test Type: aerobic  
Inoculum: activated sludge, non-adapted  
Concentration: 100 mg/l  
Result: Readily biodegradable.  
Biodegradation: 89 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
Test substance: Fresh water  
GLP: yes

Test Type: aerobic  
Inoculum: activated sludge, non-adapted  
Concentration: 25 mg/l  
Result: Readily biodegradable.  
Biodegradation: 74,7 - 81,4 %  
Related to: Dissolved organic carbon (DOC)  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
Test substance: Fresh water  
GLP: yes

### 12.3 Bioaccumulative potential

#### Components:

##### **3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

Partition coefficient: n-octanol/water : log Pow: 0,99 (23 °C)  
pH: 6,34  
Method: OECD Test Guideline 107  
GLP: yes

##### **2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):**

Bioaccumulation : Species: Cyprinus carpio (Carp)  
Exposure time: 60 d  
Temperature: 24 °C  
Concentration: 0,02 mg/l  
Bioconcentration factor (BCF): < 60  
Test substance: Fresh water  
Method: OECD Test Guideline 305C  
GLP: yes  
Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 2,3 (23 °C)  
pH: 10  
Method: OECD Test Guideline 107

##### **benzyl alcohol:**

Bioaccumulation : Bioconcentration factor (BCF): 1

Partition coefficient: n-octanol/water : log Pow: 1,1 (20 °C)

##### **2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:**

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Partition coefficient: n-octanol/water : log Pow: -0,3 (25 °C)  
Method: OECD Test Guideline 117

### 2,4,6-tris(dimethylaminomethyl)phenol:

Partition coefficient: n-octanol/water : Pow:  $\geq 0,219$  (21,5 °C)  
log Pow: -0,66 (21,5 °C)  
Method: OPPTS 830.7550

### salicylic acid:

Partition coefficient: n-octanol/water : log Pow: 2,25 (25 °C)  
Method: OECD Test Guideline 117

### 4,4'-isopropylidenediphenol:

Bioaccumulation : Species: Cyprinus carpio (Carp)  
Exposure time: 42 d  
Bioconcentration factor (BCF): 5,1 - 13,3

Partition coefficient: n-octanol/water : log Pow: 3,4 (21,5 °C)  
pH: 6,4  
Method: OECD Test Guideline 107

## 12.4 Mobility in soil

### Components:

#### 3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Distribution among environmental compartments : Koc: 928

#### 2,2'-dimethyl-4,4'-methylenebis(cyclohexylamine):

Distribution among environmental compartments : Koc: 1195

### benzyl alcohol:

Distribution among environmental compartments : Koc: 5 - 15

### salicylic acid:

Distribution among environmental compartments : Koc: 35  
Method: OECD Test Guideline 121

## 12.5 Results of PBT and vPvB assessment

### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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### 12.6 Endocrine disrupting properties

#### Product:

Assessment : This substance/mixture contains components considered to have endocrine disrupting properties for environment , according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

#### Components:

##### **4,4'-isopropylidenediphenol:**

Assessment : The substance is considered to have endocrine disrupting properties according to REACH Article 57(f) for the environment.

### 12.7 Other adverse effects

#### Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Toxic to aquatic life with long lasting effects.  
Harmful to aquatic life with long lasting effects.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

|                        |                                                                                                                                                                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product                | : Dispose of contents and container in accordance with all local, regional, national and international regulations.<br>Do not dispose of waste into sewer.<br>Do not contaminate ponds, waterways or ditches with chemical or used container. |
| Contaminated packaging | : Empty remaining contents.<br>Dispose of as unused product.<br>Do not re-use empty containers.                                                                                                                                               |

## SECTION 14: Transport information

### 14.1 UN number or ID number

|      |           |
|------|-----------|
| ADN  | : UN 2735 |
| ADR  | : UN 2735 |
| RID  | : UN 2735 |
| IMDG | : UN 2735 |
| IATA | : UN 2735 |

### 14.2 UN proper shipping name

|     |                                                                                            |
|-----|--------------------------------------------------------------------------------------------|
| ADN | : POLYAMINES, LIQUID, CORROSIVE, N.O.S.<br>(POLYOXYPROPYLENEDIAMINE, Cycloaliphatic amine) |
|-----|--------------------------------------------------------------------------------------------|

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|             |   |                                                                                          |
|-------------|---|------------------------------------------------------------------------------------------|
| <b>ADR</b>  | : | POLYAMINES, LIQUID, CORROSIVE, N.O.S.<br>(POLYOXYPROPYLENEDIAMINE, Cycloaliphatic amine) |
| <b>RID</b>  | : | POLYAMINES, LIQUID, CORROSIVE, N.O.S.<br>(POLYOXYPROPYLENEDIAMINE, Cycloaliphatic amine) |
| <b>IMDG</b> | : | POLYAMINES, LIQUID, CORROSIVE, N.O.S.<br>(POLYOXYPROPYLENEDIAMINE, Cycloaliphatic amine) |
| <b>IATA</b> | : | Polyamines, liquid, corrosive, n.o.s.<br>(POLYOXYPROPYLENEDIAMINE, Cycloaliphatic amine) |

### 14.3 Transport hazard class(es)

|             | Class | Subsidiary risks |
|-------------|-------|------------------|
| <b>ADN</b>  | :     | 8                |
| <b>ADR</b>  | :     | 8                |
| <b>RID</b>  | :     | 8                |
| <b>IMDG</b> | :     | 8                |
| <b>IATA</b> | :     | 8                |

### 14.4 Packing group

|                                          |             |
|------------------------------------------|-------------|
| <b>ADN</b>                               |             |
| Packing group                            | : II        |
| Classification Code                      | : C7        |
| Hazard Identification Number             | : 80        |
| Labels                                   | : 8         |
| <b>ADR</b>                               |             |
| Packing group                            | : II        |
| Classification Code                      | : C7        |
| Hazard Identification Number             | : 80        |
| Labels                                   | : 8         |
| Tunnel restriction code                  | : (E)       |
| <b>RID</b>                               |             |
| Packing group                            | : II        |
| Classification Code                      | : C7        |
| Hazard Identification Number             | : 80        |
| Labels                                   | : 8         |
| <b>IMDG</b>                              |             |
| Packing group                            | : II        |
| Labels                                   | : 8         |
| EmS Code                                 | : F-A, S-B  |
| <b>IATA (Cargo)</b>                      |             |
| Packing instruction (cargo aircraft)     | : 855       |
| Packing instruction (LQ)                 | : Y840      |
| Packing group                            | : II        |
| Labels                                   | : Corrosive |
| <b>IATA (Passenger)</b>                  |             |
| Packing instruction (passenger aircraft) | : 851       |

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Packing instruction (LQ) : Y840  
Packing group : II  
Labels : Corrosive

### 14.5 Environmental hazards

#### ADN

Environmentally hazardous : yes

#### ADR

Environmentally hazardous : yes

#### RID

Environmentally hazardous : yes

#### IMDG

Marine pollutant : yes(4,4'-Isopropylidenediphenol, Cycloaliphatic amine)

### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : 4,4'-isopropylidenediphenol

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:  
Number on list 75, 3

If you intend to use this product as tattoo ink, please contact your vendor.

4,4'-isopropylidenediphenol  
(Number on list 66, 30)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

E2 ENVIRONMENTAL HAZARDS

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Occupational Illnesses (R- : 49, 49 bis, 84  
461-3, France)

Installations classified for the : 4511  
protection of the environment  
(Environment Code R511-9)

### Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

### The components of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

AIIC : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

### Inventories

AICS (Australia), AIIC (Australia), DSL (Canada), IECSC (China), ENCS (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States of America (USA))

## 15.2 Chemical safety assessment

Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

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### SECTION 16: Other information

#### Full text of H-Statements

|       |                                                                                   |
|-------|-----------------------------------------------------------------------------------|
| H302  | : Harmful if swallowed.                                                           |
| H311  | : Toxic in contact with skin.                                                     |
| H312  | : Harmful in contact with skin.                                                   |
| H314  | : Causes severe skin burns and eye damage.                                        |
| H317  | : May cause an allergic skin reaction.                                            |
| H318  | : Causes serious eye damage.                                                      |
| H319  | : Causes serious eye irritation.                                                  |
| H330  | : Fatal if inhaled.                                                               |
| H332  | : Harmful if inhaled.                                                             |
| H335  | : May cause respiratory irritation.                                               |
| H360F | : May damage fertility.                                                           |
| H361d | : Suspected of damaging the unborn child.                                         |
| H373  | : May cause damage to organs through prolonged or repeated exposure if swallowed. |
| H400  | : Very toxic to aquatic life.                                                     |
| H410  | : Very toxic to aquatic life with long lasting effects.                           |
| H411  | : Toxic to aquatic life with long lasting effects.                                |
| H412  | : Harmful to aquatic life with long lasting effects.                              |

#### Full text of other abbreviations

|                   |                                                                                                                                   |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Acute Tox.        | : Acute toxicity                                                                                                                  |
| Aquatic Acute     | : Short-term (acute) aquatic hazard                                                                                               |
| Aquatic Chronic   | : Long-term (chronic) aquatic hazard                                                                                              |
| Eye Dam.          | : Serious eye damage                                                                                                              |
| Eye Irrit.        | : Eye irritation                                                                                                                  |
| Repr.             | : Reproductive toxicity                                                                                                           |
| Skin Corr.        | : Skin corrosion                                                                                                                  |
| Skin Sens.        | : Skin sensitisation                                                                                                              |
| STOT RE           | : Specific target organ toxicity - repeated exposure                                                                              |
| STOT SE           | : Specific target organ toxicity - single exposure                                                                                |
| 2004/37/EC        | : Europe. Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work |
| 2017/164/EU       | : Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values            |
| FR VLE            | : France. Occupational Exposure Limits                                                                                            |
| 2004/37/EC / TWA  | : Long term exposure limit                                                                                                        |
| 2017/164/EU / TWA | : Limit Value - eight hours                                                                                                       |
| FR VLE / VME      | : Time Weighted Average                                                                                                           |

#### Further information

##### Classification of the mixture:

|               |       |
|---------------|-------|
| Acute Tox. 4  | H302  |
| Acute Tox. 4  | H332  |
| Acute Tox. 4  | H312  |
| Skin Corr. 1A | H314  |
| Eye Dam. 1    | H318  |
| Skin Sens. 1  | H317  |
| Repr. 1B      | H360F |

##### Classification procedure:

|                    |
|--------------------|
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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## ARADUR® 3298

|         |                |              |                                 |
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|                   |      |                    |
|-------------------|------|--------------------|
| STOT RE 2         | H373 | Calculation method |
| Aquatic Chronic 2 | H411 | Calculation method |

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