

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**HUNTSMAN**

Enriching lives through innovation

## ARADUR® 985 E-1 CH

|         |                |              |                                 |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number:  | Date of last issue: 16.05.2023  |
| 2.1     | 19.01.2024     | 400001009416 | Date of first issue: 16.12.2015 |

Print Date 30.09.2024

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

#### 1.1 Product identifier

Trade name : ARADUR® 985 E-1 CH

Unique Formula Identifier (UFI) : 42CF-X0P1-C00T-Y6QS

#### 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 : Grijpenlaan 18  
3300 Tienen  
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)

|                                                                                      |                                                                                  |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Flammable liquids, Category 3                                                        | H226: Flammable liquid and vapour.                                               |
| Serious eye damage, Category 1                                                       | H318: Causes serious eye damage.                                                 |
| Reproductive toxicity, Category 2                                                    | H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child. |
| Specific target organ toxicity - single exposure, Category 3, Central nervous system | H336: May cause drowsiness or dizziness.                                         |
| Specific target organ toxicity - single exposure, Category 3, Respiratory system     | H335: May cause respiratory irritation.                                          |

### 2.2 Label elements

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

Hazard pictograms :



Signal word : Danger

Hazard statements :

|        |                                                                          |
|--------|--------------------------------------------------------------------------|
| H226   | Flammable liquid and vapour.                                             |
| H318   | Causes serious eye damage.                                               |
| H335   | May cause respiratory irritation.                                        |
| H336   | May cause drowsiness or dizziness.                                       |
| H361fd | Suspected of damaging fertility. Suspected of damaging the unborn child. |

Precautionary statements :

**Prevention:**

|      |                                                                                                   |
|------|---------------------------------------------------------------------------------------------------|
| P201 | Obtain special instructions before use.                                                           |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.    |
| P261 | Avoid breathing mist or vapours.                                                                  |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection. |

**Response:**

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.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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

4-hydroxy-4-methylpentan-2-one  
1-methoxy-2-propanol  
propan-1-ol  
butan-1-ol

### Additional Labelling

Restricted to professional users.

EUH208 Contains formaldehyde, phthalic anhydride. May produce an allergic reaction.

### 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: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

## 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) |
|--------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 4-hydroxy-4-methylpentan-2-one | 123-42-2<br>204-626-7<br>603-016-00-1<br>01-2119473975-21 | Eye Irrit. 2; H319<br>Repr. 2; H361fd<br>STOT SE 3; H335<br>(Respiratory system)<br><br>specific concentration<br>limit<br>Eye Irrit. 2; H319<br>≥ 10 % | ≥ 30 -<br>< 50           |
| 1-methoxy-2-propanol           | 107-98-2<br>203-539-1<br>603-064-00-3<br>01-2119457435-35 | Flam. Liq. 3; H226<br>STOT SE 3; H336<br>(Central nervous<br>system)                                                                                    | ≥ 20 -<br>< 30           |
| propan-1-ol                    | 71-23-8<br>200-746-9<br>603-003-00-0<br>01-2119486761-29  | Flam. Liq. 2; H225<br>Eye Dam. 1; H318<br>STOT SE 3; H336<br>(Central nervous<br>system)                                                                | ≥ 10 -<br>< 20           |
| butan-1-ol                     | 71-36-3                                                   | Flam. Liq. 3; H226                                                                                                                                      | ≥ 3 - <                  |

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|                    |                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |
|--------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                    | 200-751-6<br>603-004-00-6<br>01-2119484630-38            | Acute Tox. 4; H302<br>Skin Irrit. 2; H315<br>Eye Dam. 1; H318<br>STOT SE 3; H336<br>(Central nervous system)<br>STOT SE 3; H335<br>(Respiratory system)                                                                                                                                                                                                                                                                                                                                                                                                                               | 10                  |
| phthalic anhydride | 85-44-9<br>201-607-5<br>607-009-00-4<br>01-2119457017-41 | Acute Tox. 4; H302<br>Skin Irrit. 2; H315<br>Eye Dam. 1; H318<br>Resp. Sens. 1; H334<br>Skin Sens. 1; H317<br>STOT SE 3; H335<br>(Respiratory system)                                                                                                                                                                                                                                                                                                                                                                                                                                 | $\geq 0,1$ -<br>< 1 |
| formaldehyde       | 50-00-0<br>200-001-8<br>605-001-00-5<br>01-2119488953-20 | Acute Tox. 3; H301<br>Acute Tox. 3; H331<br>Acute Tox. 3; H311<br>Skin Corr. 1B; H314<br>Eye Dam. 1; H318<br>Skin Sens. 1; H317<br>Muta. 2; H341<br>Carc. 1B; H350<br><br>specific concentration<br>limit<br>Skin Corr. 1B; H314<br>$\geq 25$ %<br>Skin Irrit. 2; H315<br>5 - < 25 %<br>Eye Irrit. 2; H319<br>5 - < 25 %<br>STOT SE 3; H335<br>$\geq 5$ %<br>Skin Sens. 1; H317<br>$\geq 0,2$ %<br>Skin Corr. 1B; H314<br>$\geq 25$ %<br>Skin Irrit. 2; H315<br>5 - < 25 %<br>Eye Irrit. 2; H319<br>5 - < 25 %<br>STOT SE 3; H335<br>$\geq 5$ %<br>Skin Sens. 1; H317<br>$\geq 0,2$ % | < 0,1               |

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.

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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 : Call a physician or poison control centre immediately.  
If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.
- In case of skin contact : If skin irritation persists, call a physician.  
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.
- If swallowed : Keep respiratory tract clear.  
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 : Causes serious eye damage.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.  
Suspected of damaging fertility. Suspected of damaging the unborn child.

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

- Treatment : Treat symptomatically.

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### 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

#### 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.  
For safety reasons in case of fire, cans should be stored separately in closed containments.  
Use a water spray to cool fully closed containers.

### SECTION 6: Accidental release measures

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

Personal precautions : Use personal protective equipment.  
Ensure adequate ventilation.  
Remove all sources of ignition.  
Evacuate personnel to safe areas.  
Refer to protective measures listed in sections 7 and 8.  
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

#### 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

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respective authorities.

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

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

### 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

Technical measures : Ensure that eyewash stations and safety showers are close to the workstation location.

Local/Total ventilation : Ensure adequate ventilation.

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.  
Take precautionary measures against static discharges.  
Open drum carefully as content may be under pressure.  
To avoid spills during handling keep bottle on a metal tray.  
Dispose of rinse water in accordance with local and national regulations.  
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from open flames, hot surfaces and sources of ignition.

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

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

Requirements for storage areas and containers : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be

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carefully resealed and kept upright to prevent leakage.  
Observe label precautions. Keep in properly labelled containers.

Advice on common storage : For incompatible materials please refer to Section 10 of this SDS.

Recommended storage temperature : 2 - 40 °C

Further information on storage stability : Stable under normal conditions.

### 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-hydroxy-4-methylpentan-2-one                                                                     | 123-42-2 | VME                           | 50 ppm<br>240 mg/m3  | FR VLE     |
| Further information: Indicative exposure limits                                                    |          |                               |                      |            |
| 1-methoxy-2-propanol                                                                               | 107-98-2 | TWA                           | 100 ppm<br>375 mg/m3 | 2000/39/EC |
| Further information: Identifies the possibility of significant uptake through the skin, Indicative |          |                               |                      |            |
|                                                                                                    |          | STEL                          | 150 ppm<br>568 mg/m3 | 2000/39/EC |
| Further information: Identifies the possibility of significant uptake through the skin, Indicative |          |                               |                      |            |
|                                                                                                    |          | VME                           | 50 ppm<br>188 mg/m3  | FR VLE     |
| Further information: Risk of penetration through skin, Regulatory binding exposure limits          |          |                               |                      |            |
|                                                                                                    |          | VLCT (VLE)                    | 100 ppm<br>375 mg/m3 | FR VLE     |
| Further information: Risk of penetration through skin, Regulatory binding exposure limits          |          |                               |                      |            |
| propan-1-ol                                                                                        | 71-23-8  | VME                           | 200 ppm<br>500 mg/m3 | FR VLE     |
| Further information: Indicative exposure limits                                                    |          |                               |                      |            |
| butan-1-ol                                                                                         | 71-36-3  | VLCT (VLE)                    | 50 ppm<br>150 mg/m3  | FR VLE     |
| Further information: Indicative exposure limits                                                    |          |                               |                      |            |
| phthalic anhydride                                                                                 | 85-44-9  | VLCT (VLE)                    | 6 mg/m3              | FR VLE     |



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|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|------------|
|              | Further information: Risk for sensitisation, Indicative exposure limits                                                                                                                      |            |                       |            |
| formaldehyde | 50-00-0                                                                                                                                                                                      | VME        | 0,3 ppm<br>0,37 mg/m3 | FR VLE     |
|              | Further information: Carcinogenic category 1B - Probably carcinogenic to humans, Mutagenic category 2 - Possibly mutagenic to humans, Skin sensitisation, Regulatory binding exposure limits |            |                       |            |
|              |                                                                                                                                                                                              | VLCT (VLE) | 0,6 ppm<br>0,74 mg/m3 | FR VLE     |
|              | Further information: Carcinogenic category 1B - Probably carcinogenic to humans, Mutagenic category 2 - Possibly mutagenic to humans, Skin sensitisation, Regulatory binding exposure limits |            |                       |            |
|              |                                                                                                                                                                                              | STEL       | 0,6 ppm<br>0,74 mg/m3 | 2004/37/EC |
|              | Further information: Dermal sensitisation, Carcinogens or mutagens                                                                                                                           |            |                       |            |
|              |                                                                                                                                                                                              | TWA        | 0,3 ppm<br>0,37 mg/m3 | 2004/37/EC |
|              | Further information: Dermal sensitisation, 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            |
|--------------------------------|-----------|-----------------|----------------------------|------------------|
| phthalic anhydride             | Workers   | Inhalation      | Long-term systemic effects | 49,4 mg/m3       |
|                                | Workers   | Dermal          | Long-term systemic effects | 14 mg/kg bw/day  |
|                                | Consumers | Inhalation      | Long-term systemic effects | 8,7 mg/m3        |
|                                | Consumers | Dermal          | Long-term systemic effects | 5 mg/kg bw/day   |
|                                | Consumers | Oral            | Long-term systemic effects | 5 mg/kg bw/day   |
|                                | Consumers | Oral            | Acute systemic effects     | 25 mg/kg bw/day  |
| 1-methoxy-2-propanol           | Workers   | Inhalation      | Long-term systemic effects | 369 mg/m3        |
|                                | Workers   | Inhalation      | Acute systemic effects     | 533,5 mg/m3      |
|                                | Workers   | Inhalation      | Acute local effects        | 553,5 mg/m3      |
|                                | Workers   | Dermal          | Long-term systemic effects | 183 mg/kg        |
|                                | Consumers | Inhalation      | Long-term systemic effects | 43,9 mg/m3       |
|                                | Consumers | Dermal          | Long-term systemic effects | 78 mg/kg         |
| 4-hydroxy-4-methylpentan-2-one | Consumers | Oral            | Long-term systemic effects | 33 mg/kg         |
|                                | Workers   | Inhalation      | Long-term systemic effects | 32,6 mg/m3       |
|                                | Workers   | Dermal          | Long-term systemic effects | 467 mg/kg bw/day |
|                                | Consumers | Inhalation      | Long-term systemic effects | 5,8 mg/m3        |
|                                | Consumers | Dermal          | Long-term systemic effects | 167 mg/kg bw/day |
|                                |           |                 |                            |                  |

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|                    | Consumers | Oral       | Long-term systemic effects | 1,67 mg/kg bw/day |
| butan-1-ol         | Workers   | Inhalation | Long-term local effects    | 310 mg/m3         |
|                    | Consumers | Inhalation | Long-term systemic effects | 55,357 mg/m3      |
|                    | Consumers | Inhalation | Long-term local effects    | 115 mg/m3         |
|                    | Consumers | Dermal     | Long-term systemic effects | 3,125 mg/m3       |
|                    | Consumers | Oral       | Long-term systemic effects | 1,562 mg/m3       |
| cyanoguanidine     | Workers   | Inhalation | Long-term systemic effects | 15,3 mg/m3        |
|                    | Workers   | Inhalation | Acute systemic effects     | 76,5 mg/m3        |
|                    | Workers   | Dermal     | Long-term systemic effects | 30,1 mg/kg        |
|                    | Consumers | Inhalation | Long-term local effects    | 11,2 mg/m3        |
|                    | Consumers | Inhalation | Acute systemic effects     | 56 mg/m3          |
|                    | Consumers | Dermal     | Long-term systemic effects | 6,5 mg/kg         |
|                    | Consumers | Oral       | Long-term systemic effects | 6,5 mg/kg         |
| phthalic anhydride | Workers   | Inhalation | Long-term systemic effects | 49,4 mg/m3        |
|                    | Workers   | Dermal     | Long-term systemic effects | 14 mg/kg bw/day   |
|                    | Consumers | Inhalation | Long-term systemic effects | 8,7 mg/m3         |
|                    | Consumers | Dermal     | Long-term systemic effects | 5 mg/kg bw/day    |
|                    | Consumers | Oral       | Long-term systemic effects | 5 mg/kg bw/day    |
|                    | Consumers | Oral       | Acute systemic effects     | 25 mg/kg bw/day   |
| formaldehyde       | Workers   | Inhalation | Long-term systemic effects | 9 mg/m3           |
|                    | Workers   | Inhalation | Long-term local effects    | 0,375 mg/m3       |
|                    | Workers   | Inhalation | Acute local effects        | 0,75 mg/m3        |
|                    | Workers   | Dermal     | Long-term systemic effects | 240 mg/kg bw/day  |
|                    | Workers   | Dermal     | Long-term local effects    | 0,037 mg/cm2      |
|                    | Consumers | Inhalation | Long-term systemic effects | 3,2 mg/m3         |
|                    | Consumers | Inhalation | Long-term local effects    | 0,1 mg/m3         |
|                    | Consumers | Dermal     | Long-term systemic effects | 102 mg/kg bw/day  |
|                    | Consumers | Dermal     | Long-term local effects    | 0,012 mg/cm2      |

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|  |           |      |                            |                  |
|--|-----------|------|----------------------------|------------------|
|  |           |      | effects                    |                  |
|  | Consumers | Oral | Long-term systemic effects | 4,1 mg/kg bw/day |

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

| Substance name                 | Environmental Compartment  | Value                        |
|--------------------------------|----------------------------|------------------------------|
| phthalic anhydride             | Marine water               | 0,1 mg/l                     |
|                                | Remarks:Assessment Factors |                              |
|                                | Freshwater - intermittent  | 5,6 mg/l                     |
|                                | Sewage treatment plant     | 10 mg/l                      |
|                                | Remarks:Assessment Factors |                              |
|                                | Fresh water sediment       | 3,8 mg/kg                    |
|                                | Remarks:Equilibrium method |                              |
|                                | Marine sediment            | 0,38 mg/kg                   |
|                                | Remarks:Equilibrium method |                              |
|                                | Soil                       | 0,173 mg/kg                  |
| 1-methoxy-2-propanol           | Remarks:Equilibrium method |                              |
|                                | Fresh water                | 10 mg/l                      |
|                                | Marine water               | 1 mg/l                       |
|                                | Freshwater - intermittent  | 100 mg/l                     |
|                                | Sewage treatment plant     | 100 mg/l                     |
|                                | Fresh water sediment       | 52,3 mg/kg                   |
|                                | Marine sediment            | 5,2 mg/kg                    |
|                                | Soil                       | 4,59 mg/kg                   |
| 4-hydroxy-4-methylpentan-2-one | Remarks:Equilibrium method |                              |
|                                | Marine water               | 0,2 mg/l                     |
|                                | Fresh water                | 2 mg/l                       |
|                                | Sewage treatment plant     | 10 mg/l                      |
|                                | Intermittent use/release   | 1 mg/l                       |
|                                | Fresh water sediment       | 7,4 mg/kg dry weight (d.w.)  |
|                                | Marine sediment            | 0,74 mg/kg dry weight (d.w.) |
|                                | Soil                       | 0,31 mg/kg dry weight (d.w.) |
| cyanoguanidine                 | Fresh water                | 2,5 mg/l                     |
|                                | Marine water               | 0,25 mg/l                    |
|                                | Freshwater - intermittent  | 10 mg/l                      |
|                                | Sewage treatment plant     | 34 mg/l                      |
|                                | Fresh water sediment       | 5,83 mg/kg                   |
|                                | Marine sediment            | 0,58 mg/kg                   |
|                                | Soil                       | 3,16 mg/kg                   |
| phthalic anhydride             | Marine water               | 0,1 mg/l                     |
|                                | Remarks:Assessment Factors |                              |
|                                | Freshwater - intermittent  | 5,6 mg/l                     |
|                                | Sewage treatment plant     | 10 mg/l                      |
|                                | Remarks:Assessment Factors |                              |
|                                | Fresh water sediment       | 3,8 mg/kg                    |
|                                | Remarks:Equilibrium method |                              |
|                                | Marine sediment            | 0,38 mg/kg                   |
|                                | Remarks:Equilibrium method |                              |
|                                | Soil                       | 0,173 mg/kg                  |
|                                | Remarks:Equilibrium method |                              |

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### 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

Material : Ethyl Vinyl Alcohol Laminate (EVAL)

Break through time : > 8 h

Material : Nitrile rubber

Break through time : 10 - 480 min

Remarks : 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).  
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

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

In the case of vapour formation use a respirator with an approved filter.

Filter type : Combined particulates and organic vapour type (A-P)

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : Clear

Odour : solvent-like

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|                                                  |                                               |
|--------------------------------------------------|-----------------------------------------------|
| Odour Threshold                                  | : No data is available on the product itself. |
| Melting point/freezing point                     | : No data is available on the product itself. |
| Boiling point                                    | : 153 °C                                      |
| 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                                      | : 36 °C<br>Method: Tag closed cup             |
| Auto-ignition temperature                        | : No data is available on the product itself. |
| Decomposition temperature                        | : > 300 °C                                    |
| pH                                               | : 7 (20 °C)<br>Concentration: 500 g/l         |
| Viscosity                                        | : No data is available on the product itself. |
| Solubility(ies)<br>Water solubility              | : practically insoluble (20 °C)               |
| 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                                  | : 6,5 hPa (20 °C)                             |
| Density                                          | : 0,95 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.

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### 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 : Vapours may form explosive mixture with air.

#### 10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

#### 10.5 Incompatible materials

Materials to avoid : None known.

#### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

### SECTION 11: Toxicological information

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

##### Acute toxicity

Not classified due to lack of data.

##### Product:

Acute oral toxicity : LD50 (Rat): > 2 000 mg/kg

##### Components:

##### **4-hydroxy-4-methylpentan-2-one:**

Acute oral toxicity : LD50 (Rat, male and female): 3 002 mg/kg  
Method: OECD Test Guideline 401  
GLP: no

Acute inhalation toxicity : LC0 (Rat, male and female): >= 7,6 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): 13 750 mg/kg

LD50 (Rat, male and female): 2ml/kg  
Method: OECD Test Guideline 402

##### **1-methoxy-2-propanol:**

Acute oral toxicity : LD50 (Rat, male and female): 4 016 mg/kg

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Method: Directive 67/548/EEC, Annex V, B.1.

Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): > 7000 ppm  
Exposure time: 6 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat, male and female): > 2 000 mg/kg  
Method: Directive 67/548/EEC, Annex V, B.3.  
Assessment: The substance or mixture has no acute dermal toxicity

### butan-1-ol:

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : LC0 (Rat, male and female): > 17,76 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit, male): 3 430 mg/kg  
Method: OECD Test Guideline 402

### phthalic anhydride:

Acute oral toxicity : LD50 (Rat, male): 1 530 mg/kg  
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat, male and female): > 2,14 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
GLP: yes  
Assessment: The substance or mixture has no acute inhalation toxicity

### formaldehyde:

Acute oral toxicity : LD50 (Rat, male): 640 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 463 ppm  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403  
GLP: yes  
Assessment: The component/mixture is toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit): 270 mg/kg  
Assessment: The component/mixture is toxic after single

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contact with skin.

### Skin corrosion/irritation

Not classified due to lack of data.

#### Components:

##### **4-hydroxy-4-methylpentan-2-one:**

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

##### **1-methoxy-2-propanol:**

|            |                                       |
|------------|---------------------------------------|
| Species    | : Rabbit                              |
| Assessment | : No skin irritation                  |
| Method     | : Directive 67/548/EEC, Annex V, B.4. |
| Result     | : No skin irritation                  |

##### **butan-1-ol:**

|            |                       |
|------------|-----------------------|
| Species    | : Rabbit              |
| Assessment | : Irritant            |
| Result     | : Irritating to skin. |

##### **phthalic anhydride:**

|            |                       |
|------------|-----------------------|
| Species    | : Rabbit              |
| Assessment | : Irritating to skin. |
| Result     | : Skin irritation     |

##### **formaldehyde:**

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

### Serious eye damage/eye irritation

Causes serious eye damage.

#### Components:

##### **4-hydroxy-4-methylpentan-2-one:**

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

##### **1-methoxy-2-propanol:**

|            |                                       |
|------------|---------------------------------------|
| Species    | : Rabbit                              |
| Assessment | : No eye irritation                   |
| Method     | : Directive 67/548/EEC, Annex V, B.5. |



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Result : No eye irritation

### propan-1-ol:

Species : Rabbit  
Assessment : Corrosive  
Method : OECD Test Guideline 405  
Result : Irreversible effects on the eye

### butan-1-ol:

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

### phthalic anhydride:

Species : Rabbit  
Assessment : Risk of serious damage to eyes.  
Result : Risk of serious damage to eyes.  
GLP : no

### formaldehyde:

Assessment : Risk of serious damage to eyes.

### Respiratory or skin sensitisation

#### Skin sensitisation

Not classified due to lack of data.

#### Respiratory sensitisation

Not classified due to lack of data.

### Components:

#### 4-hydroxy-4-methylpentan-2-one:

Test Type : Maximisation Test  
Exposure routes : Skin  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : Did not cause sensitisation on laboratory animals.

#### 1-methoxy-2-propanol:

Test Type : Maximisation Test  
Exposure routes : Skin  
Species : Guinea pig  
Method : Directive 67/548/EEC, Annex V, B.6.  
Result : Does not cause skin sensitisation.

#### phthalic anhydride:

Test Type : Local lymph node assay (LLNA)  
Exposure routes : Respiratory Tract  
Species : Guinea pig  
Assessment : May cause sensitisation by inhalation.

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Result : May cause sensitisation by inhalation.

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

### formaldehyde:

Exposure routes : Skin

Species : Guinea pig

Assessment : Probability or evidence of low to moderate skin sensitisation rate in humans

Method : OECD Test Guideline 406

Result : Probability or evidence of low to moderate skin sensitisation rate in humans

Test Type : Local lymph node assay (LLNA)

Exposure routes : Respiratory Tract

Species : Mouse

Assessment : Did not cause sensitisation on laboratory animals.

Result : Did not cause sensitisation on laboratory animals.

Assessment : May cause sensitisation by skin contact.

### Germ cell mutagenicity

Not classified due to lack of data.

### Components:

#### 4-hydroxy-4-methylpentan-2-one:

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 lung 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: Salmonella tryphimurium and E. coli  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

Germ cell mutagenicity-  
Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

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### 1-methoxy-2-propanol:

Genotoxicity in vitro

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

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster lung cells  
Metabolic activation: negative  
Method: OECD Test Guideline 476  
Result: negative

### butan-1-ol:

Genotoxicity in vitro

: Concentration: 740 µg/L  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

Metabolic activation: negative  
Result: negative

### phthalic anhydride:

Genotoxicity in vitro

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

Test Type: sister chromatid exchange assay  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Result: negative  
GLP: yes

Test Type: 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

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Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mouse (male)  
Cell type: Bone marrow  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Remarks: Information given is based on data obtained from similar substances.

### formaldehyde:

Genotoxicity in vitro : Test Type: unscheduled DNA synthesis assay  
Result: positive

Test Type: unscheduled DNA synthesis assay  
Result: positive

Test Type: gene mutation test  
Test system: Chinese hamster lung cells  
Concentration: 0, 3.75, 7.5, 15 µg/mL  
Metabolic activation: without metabolic activation  
Method: OECD Test Guideline 476  
Result: positive

Test Type: reverse mutation assay  
Test system: Salmonella typhimurium  
Metabolic activation: without metabolic activation  
Method: OECD Test Guideline 471  
Result: positive

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: positive

Genotoxicity in vivo : Cell type: Germ + somatic  
Result: Positive results were obtained in some in vivo tests.

Test Type: in vivo assay  
Species: Rat (male)  
Application Route: inhalation (vapour)  
Dose: 0.7/2/5.8/9.1 ppm  
Result: negative

Test Type: in vivo assay  
Species: Rat (male)  
Application Route: inhalation (vapour)  
Dose: 0.7/2/5.8/9.1 ppm  
Result: negative

Test Type: in vivo assay  
Species: Rat (male)  
Application Route: inhalation (gas)

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Dose: 0.7/2/5.8/9.1/15.2 ppm

Result: positive

Germ cell mutagenicity-Assessment : Positive result(s) from in vivo non-mammalian somatic cell mutagenicity tests, supported by positive results from in vitro mutagenicity assays.

### Carcinogenicity

Not classified due to lack of data.

### Components:

#### **4-hydroxy-4-methylpentan-2-one:**

|                   |                                                                        |
|-------------------|------------------------------------------------------------------------|
| Species           | : Rat                                                                  |
| Application Route | : Inhalation                                                           |
| Result            | : negative                                                             |
| Remarks           | : Information given is based on data obtained from similar substances. |

#### **1-methoxy-2-propanol:**

|                        |                           |
|------------------------|---------------------------|
| Species                | : Mouse, male and female  |
| Application Route      | : inhalation (vapour)     |
| Exposure time          | : 24 month(s)             |
| Dose                   | : 300, 1000, 3000 ppm     |
| Frequency of Treatment | : 5 daily                 |
| Method                 | : OECD Test Guideline 453 |
| Result                 | : negative                |

#### **phthalic anhydride:**

|                        |                                   |
|------------------------|-----------------------------------|
| Species                | : Rat, male and female            |
| Application Route      | : Oral                            |
| Exposure time          | : 105 weeks                       |
| Dose                   | : 0/500/1000 mg/kg                |
| Frequency of Treatment | : 7 daily                         |
| NOAEL                  | : 1 000 mg/kg body weight         |
| Result                 | : negative                        |
| Species                | : Mouse, male and female          |
| Application Route      | : Oral                            |
| Exposure time          | : 104 weeks                       |
| Frequency of Treatment | : 7 daily                         |
| NOAEL                  | : 1 785 - 3 570 mg/kg body weight |
| Result                 | : negative                        |

#### **formaldehyde:**

|                        |               |
|------------------------|---------------|
| Species                | : Rat, male   |
| Application Route      | : Inhalation  |
| Exposure time          | : 24 month(s) |
| Dose                   | : 6 ppm       |
| Frequency of Treatment | : 6 hour      |
| Result                 | : positive    |

Carcinogenicity - : Sufficient evidence of carcinogenicity in inhalation studies with

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Assessment animals

### Reproductive toxicity

Suspected of damaging fertility. Suspected of damaging the unborn child.

#### Components:

##### **4-hydroxy-4-methylpentan-2-one:**

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Dose: 30, 100, 300, 1000 mg/kg bw/d  
General Toxicity - Parent: NOAEL: 300 mg/kg body weight  
Method: OECD Test Guideline 422  
Result: Some evidence of adverse effects on development, based on animal experiments.

Effects on foetal development : Species: Rabbit  
General Toxicity Maternal: NOAEL: 300 mg/kg body weight  
Developmental Toxicity: NOAEL: 100 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Reproductive toxicity - Assessment : Suspected of damaging fertility. Suspected of damaging the unborn child., Some evidence of adverse effects on development, based on animal experiments.

##### **1-methoxy-2-propanol:**

Effects on fertility : Species: Rat, male and female  
Application Route: inhalation (vapour)  
Dose: 300, 1000, 3000 ppm  
Frequency of Treatment: 1 daily  
Method: OECD Test Guideline 416  
Result: No effects on fertility and early embryonic development were detected.

Effects on foetal development : Species: Rat, female  
Application Route: Inhalation  
Dose: 0, 500, 1500, 3000 ppm  
Duration of Single Treatment: 21 Days  
Frequency of Treatment: 1 daily  
General Toxicity Maternal: NOAEL: 1 500 ppm  
Method: OECD Test Guideline 414  
Result: Not classified due to inconclusive data.

Species: Rabbit, female  
Application Route: Inhalation  
Dose: 0, 500, 1500, 3000 ppm  
Duration of Single Treatment: 29 Days  
Frequency of Treatment: 1 daily  
General Toxicity Maternal: NOAEL: 1 500 ppm  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

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Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Result: No effects on fertility and early embryonic development were detected.

Effects on foetal development : Species: Rat, female  
Application Route: Oral  
General Toxicity Maternal: NOAEL: 1 454 mg/kg body weight  
Result: No teratogenic effects

### phthalic anhydride:

Effects on foetal development : Species: Rat, female  
Application Route: Oral  
Dose: 1021/1763/2981 milligram per kilogram  
General Toxicity Maternal: NOAEL: ca. 1 021 mg/kg body weight  
Developmental Toxicity: NOAEL: 1 763 mg/kg body weight  
Result: No teratogenic effects  
Remarks: Information given is based on data obtained from similar substances.

### formaldehyde:

Effects on foetal development : Test Type: Pre-natal  
Species: Rat, female  
Application Route: inhalation (gas)  
Dose: 2/5/10 ppm  
Duration of Single Treatment: 10 d  
Frequency of Treatment: 7 days/week  
General Toxicity Maternal: NOAEC: 5 ppm  
Developmental Toxicity: NOAEC: 10 ppm  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Test Type: Pre-natal  
Species: Dog, female  
Application Route: Oral  
Dose: 3.1 and 9.4 mg/kg bw/day  
Duration of Single Treatment: 50 d  
General Toxicity Maternal: LOAEL: > 9,4 mg/kg body weight  
Developmental Toxicity: LOAEL: > 9,4 mg/kg body weight  
Method: OECD Test Guideline 414

### STOT - single exposure

May cause respiratory irritation.  
May cause drowsiness or dizziness.

### Components:

#### 4-hydroxy-4-methylpentan-2-one:

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

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### 1-methoxy-2-propanol:

|                 |                                      |
|-----------------|--------------------------------------|
| Exposure routes | : Inhalation                         |
| Target Organs   | : Central nervous system             |
| Assessment      | : May cause drowsiness or dizziness. |

### propan-1-ol:

|                 |                                                                                                                                |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------|
| Exposure routes | : Inhalation                                                                                                                   |
| Target Organs   | : Central nervous system                                                                                                       |
| Assessment      | : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects. |

### butan-1-ol:

|                 |                                                                         |
|-----------------|-------------------------------------------------------------------------|
| Exposure routes | : Inhalation                                                            |
| Target Organs   | : Respiratory Tract, Narcotic effects                                   |
| Assessment      | : May cause respiratory irritation., May cause drowsiness or dizziness. |

### phthalic anhydride:

|                 |                                     |
|-----------------|-------------------------------------|
| Exposure routes | : Inhalation                        |
| Target Organs   | : Respiratory Tract                 |
| Assessment      | : May cause respiratory irritation. |

### STOT - repeated exposure

Not classified due to lack of data.

### Repeated dose toxicity

#### Components:

#### 4-hydroxy-4-methylpentan-2-one:

|                   |                           |
|-------------------|---------------------------|
| Species           | : Rat, male and female    |
| NOAEL             | : 600 mg/kg               |
| Application Route | : Inhalation              |
| Exposure time     | : 6 weeks                 |
| Method            | : OECD Test Guideline 408 |
| Target Organs     | : Liver, Kidney           |

|                   |              |
|-------------------|--------------|
| NOAEL             | : 1041 mg/m3 |
| Application Route | : Inhalation |

|                   |                           |
|-------------------|---------------------------|
| Species           | : Rat                     |
| Application Route | : Oral                    |
| Exposure time     | : 8 weeks                 |
| Method            | : OECD Test Guideline 408 |
| Target Organs     | : Liver, Kidney           |

### 1-methoxy-2-propanol:

|                   |                 |
|-------------------|-----------------|
| Species           | : Rat, male     |
| NOAEL             | : 919 mg/kg     |
| LOAEL             | : 2 757 mg/kg   |
| Application Route | : oral (gavage) |



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Exposure time : 35 days  
Number of exposures : 5 days/week  
Method : Subacute toxicity

Species : Rat, male and female  
NOAEL : 1000 ppm  
Application Route : Inhalation  
Test atmosphere : vapour  
Exposure time : 13 weeks  
Number of exposures : 6 hours/day; 5 days/week  
Dose : 300, 1000 and 3000 ppm  
Method : OECD Test Guideline 413

Species : Rabbit, male and female  
NOAEL : 1000 ppm  
Application Route : Inhalation  
Test atmosphere : vapour  
Exposure time : 13 weeks  
Number of exposures : 6 hours/day; 5 days/week  
Dose : 300, 1000 and 3000 ppm  
Method : OECD Test Guideline 413

Species : Rat, male and female  
NOAEL : 300 ppm  
Application Route : Inhalation  
Test atmosphere : vapour  
Exposure time : 52 weeks  
Number of exposures : 6 hours/day, 5 days/week  
Dose : 300, 1000 and 3000 ppm  
Method : OECD Test Guideline 453

Species : Rabbit, male and female  
NOAEL : > 1000 mg/kg  
Application Route : Dermal  
Exposure time : 21 days  
Number of exposures : 1 application/day  
Dose : 1000 mg/kg  
Method : OECD Test Guideline 410

### butan-1-ol:

Species : Rat, male and female  
NOAEL : 125 mg/kg  
Application Route : Ingestion  
Method : Subchronic toxicity

### phthalic anhydride:

Species : Rat, male and female  
NOAEL : 500 mg/kg  
Application Route : oral (feed)  
Exposure time : 105 Weeks  
Number of exposures : daily  
Dose : 0/500/1000 mg/kg bw/day

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### formaldehyde:

|                     |                                   |
|---------------------|-----------------------------------|
| Species             | : Rat, male and female            |
| NOAEL               | : 82 mg/kg                        |
| Application Route   | : oral (drinking water)           |
| Exposure time       | : 103 Weeks                       |
| Number of exposures | : 7 days/week                     |
| Dose                | : 5/25/125 mg/kg bw/day           |
| Method              | : OECD Test Guideline 453         |
| Target Organs       | : Gastrointestinal tract, Stomach |

### Aspiration toxicity

Not classified due to lack of data.

## 11.2 Information on other hazards

### Endocrine disrupting properties

#### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

### Experience with human exposure

No data available

### Toxicology, Metabolism, Distribution

No data available

### Neurological effects

No data available

### Further information

#### Product:

Remarks : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.  
Concentrations substantially above the TLV value may cause narcotic effects.  
Solvents may degrease the skin.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

#### **4-hydroxy-4-methylpentan-2-one:**

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): > 100 mg/l  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 203  
GLP: yes

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Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1 000 mg/l  
Exposure time: 48 h  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (green algae)): 1 000 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201  
GLP: yes

EC50 (Pseudokirchneriella subcapitata (green algae)): > 1 000 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201  
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1 000 mg/l  
Exposure time: 3 h  
Test Type: static test  
Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity) : GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 100 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

### 1-methoxy-2-propanol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 1 000 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 23 300 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: Other guidelines

Toxicity to algae/aquatic plants : EgC50 (Selenastrum capricornutum (green algae)): > 1 000 mg/l

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Exposure time: 168 h  
Test Type: static test  
Test substance: Fresh water

Toxicity to microorganisms : IC50 : > 1 000 mg/l  
Exposure time: 3 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 209

### propan-1-ol:

Toxicity to fish : LC50 : 4 630 mg/l  
Exposure time: 96 h

### butan-1-ol:

Toxicity to algae/aquatic plants : IC50 : 8 500 mg/l  
Exposure time: 72 h

### phthalic anhydride:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 560 mg/l  
Exposure time: 168 h  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 210  
GLP: no

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 640 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
GLP: yes  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic plants : NOEC (Desmodesmus subspicatus (green algae)): >= 100 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 201  
GLP: yes  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to microorganisms : EC50 (activated sludge): > 1 000 mg/l  
Exposure time: 3 h  
Test Type: static test  
Test substance: Fresh water  
Method: ISO 8192  
GLP: no

EC50 (Pseudomonas putida): 213 mg/l

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Exposure time: 16 h  
Test Type: static test  
Test substance: Fresh water  
Method: ISO Method, other

Toxicity to fish (Chronic toxicity) : NOEC: 10 mg/l  
Exposure time: 60 d  
Species: Oncorhynchus mykiss (rainbow trout)  
Test Type: semi-static test  
Analytical monitoring: no  
Test substance: Fresh water  
Method: OECD Test Guideline 210  
GLP: no

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 16 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test substance: Fresh water  
Method: OECD Test Guideline 211  
GLP: yes

Plant toxicity : EC50: 731 mg/l  
Exposure time: 72 h  
Species: Lactuca sativa (lettuce)

### formaldehyde:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 24,1 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia pulex (Water flea)): 5,8 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 4,89 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

EC50 (Desmodesmus subspicatus (green algae)): 3,48 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): 20,4 mg/l  
Exposure time: 120 h

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Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 209

Toxicity to daphnia and other : NOEC: 1,04 mg/l  
aquatic invertebrates  
(Chronic toxicity) Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test substance: Fresh water  
Method: OECD Test Guideline 211

### 12.2 Persistence and degradability

#### Components:

##### **4-hydroxy-4-methylpentan-2-one:**

Biodegradability : Test Type: aerobic  
Inoculum: activated sludge  
Concentration: 57,5 mg/l  
Result: Readily biodegradable.  
Biodegradation: 98,51 %  
Related to: Dissolved organic carbon (DOC)  
Exposure time: 28 d  
Method: OECD Test Guideline 301A

##### **1-methoxy-2-propanol:**

Biodegradability : Test Type: aerobic  
Inoculum: see user defined free text  
Result: Readily biodegradable.  
Biodegradation: 96 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301E

##### **butan-1-ol:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: > 60 %  
Exposure time: 28 d

##### **phthalic anhydride:**

Biodegradability : Test Type: aerobic  
Inoculum: Mixture  
Concentration: 100 mg/l  
Result: Readily biodegradable.  
Biodegradation: 85,2 %  
Exposure time: 14 d  
Method: OECD Test Guideline 301C  
GLP: yes

Test Type: aerobic  
Inoculum: Domestic sewage  
Concentration: 3 mg/l  
Result: Readily biodegradable.  
Biodegradation: 74 %  
Exposure time: 30 d

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Method: OECD Test Guideline 301D  
GLP: no

Inoculum: activated sludge  
Result: Inherently biodegradable.  
Biodegradation: 88 %  
Exposure time: 1 d

Stability in water : Degradation half life (DT50): 0,7 h (25 °C)  
pH: 4  
Remarks: Fresh water

Degradation half life (DT50): 0,3 h (25 °C)  
pH: 7  
Remarks: Fresh water

Degradation half life (DT50): 0,02 h (25 °C)  
pH: 9  
Remarks: Fresh water

Photodegradation : Test Type: Water  
Degradation (direct photolysis): 50 %  
Test substance: Marine water

Test Type: Water  
Degradation (direct photolysis): 50 %

Test Type: Air  
Degradation (direct photolysis): 50 %

Test Type: Air  
Degradation (direct photolysis): 50 %  
Test substance: Marine water

Degradation (direct photolysis): 50 %

### formaldehyde:

Biodegradability

: Test Type: anaerobic  
Inoculum: activated sludge  
Concentration: 1 360 mg/l  
Result: Readily biodegradable.  
Biodegradation: 100 %  
Exposure time: 4 d  
Test substance: Fresh water

Test Type: aerobic  
Inoculum: Sewage (STP effluent)  
Result: Readily biodegradable.  
Biodegradation: 99 %  
Related to: Dissolved organic carbon (DOC)  
Exposure time: 28 d  
Method: OECD Test Guideline 303A  
Test substance: Fresh water

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Biochemical Oxygen Demand (BOD) : 0,33 - 1,07 mg/l  
Incubation time: 5 d

Chemical Oxygen Demand (COD) : 1.07 mgO<sub>2</sub>/g

### 12.3 Bioaccumulative potential

#### Components:

##### **4-hydroxy-4-methylpentan-2-one:**

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: -0,09  
Method: QSAR  
GLP: no

##### **1-methoxy-2-propanol:**

Bioaccumulation : Bioconcentration factor (BCF): 0,25

Partition coefficient: n-octanol/water : log Pow: 0,43

##### **butan-1-ol:**

Partition coefficient: n-octanol/water : log Pow: 0,8 - 0,9

##### **phthalic anhydride:**

Bioaccumulation : Bioconcentration factor (BCF): 5,28  
Method: No information available.  
Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.

Bioconcentration factor (BCF): 0,01

Partition coefficient: n-octanol/water : log Pow: 2,07 (25 °C)  
Method: QSAR  
GLP: no

##### **formaldehyde:**

Bioaccumulation : Species: Fish  
Bioconcentration factor (BCF): < 1  
Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 0,35 (25 °C)

### 12.4 Mobility in soil

#### Components:

##### **1-methoxy-2-propanol:**



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Distribution among  
environmental compartments : Koc: 0,21

### butan-1-ol:

Distribution among  
environmental compartments : Koc: 71,6

### phthalic anhydride:

Mobility : Medium: Air  
Content: 0 %

: Medium: Water  
Content: 99,91 %

: Medium: Soil  
Content: 0,04 %

: Medium: Sediment  
Content: 0,04 %

: Content: 0 %

: Medium: Biota  
Content: 0 %

: Content: 0 %

Distribution among  
environmental compartments : Koc: 2 - 31  
Method: OECD Test Guideline 106

### formaldehyde:

Distribution among  
environmental compartments : Koc: 15,9, log Koc: 1,202  
Method: Calculation method

## 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.

### Components:

#### phthalic anhydride:

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 : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

### 12.7 Other adverse effects

No data available

## 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.<br>Do not burn, or use a cutting torch on, the empty drum.                                                                                    |

## SECTION 14: Transport information

### 14.1 UN number or ID number

|      |           |
|------|-----------|
| ADN  | : UN 1993 |
| ADR  | : UN 1993 |
| RID  | : UN 1993 |
| IMDG | : UN 1993 |
| IATA | : UN 1993 |

### 14.2 UN proper shipping name

|      |                                                                      |
|------|----------------------------------------------------------------------|
| ADN  | : FLAMMABLE LIQUID, N.O.S.<br>(1-Methoxy-2-propanol, Propyl alcohol) |
| ADR  | : FLAMMABLE LIQUID, N.O.S.<br>(1-Methoxy-2-propanol, Propyl alcohol) |
| RID  | : FLAMMABLE LIQUID, N.O.S.<br>(1-Methoxy-2-propanol, Propyl alcohol) |
| IMDG | : FLAMMABLE LIQUID, N.O.S.<br>(1-Methoxy-2-propanol, Propyl alcohol) |
| IATA | : Flammable liquid, n.o.s.<br>(1-Methoxy-2-propanol, Propyl alcohol) |

### 14.3 Transport hazard class(es)

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|             | Class | Subsidiary risks |
|-------------|-------|------------------|
| <b>ADN</b>  | : 3   |                  |
| <b>ADR</b>  | : 3   |                  |
| <b>RID</b>  | : 3   |                  |
| <b>IMDG</b> | : 3   |                  |
| <b>IATA</b> | : 3   |                  |

### 14.4 Packing group

#### ADN

|                              |       |
|------------------------------|-------|
| Packing group                | : III |
| Classification Code          | : F1  |
| Hazard Identification Number | : 30  |
| Labels                       | : 3   |

#### ADR

|                              |         |
|------------------------------|---------|
| Packing group                | : III   |
| Classification Code          | : F1    |
| Hazard Identification Number | : 30    |
| Labels                       | : 3     |
| Tunnel restriction code      | : (D/E) |

#### RID

|                              |       |
|------------------------------|-------|
| Packing group                | : III |
| Classification Code          | : F1  |
| Hazard Identification Number | : 30  |
| Labels                       | : 3   |

#### IMDG

|               |                   |
|---------------|-------------------|
| Packing group | : III             |
| Labels        | : 3               |
| EmS Code      | : F-E, <u>S-E</u> |

#### IATA (Cargo)

|                                      |                     |
|--------------------------------------|---------------------|
| Packing instruction (cargo aircraft) | : 366               |
| Packing instruction (LQ)             | : Y344              |
| Packing group                        | : III               |
| Labels                               | : Flammable Liquids |

#### IATA (Passenger)

|                                          |                     |
|------------------------------------------|---------------------|
| Packing instruction (passenger aircraft) | : 355               |
| Packing instruction (LQ)                 | : Y344              |
| Packing group                            | : III               |
| Labels                                   | : Flammable Liquids |

### 14.5 Environmental hazards

#### ADN

|                           |      |
|---------------------------|------|
| Environmentally hazardous | : no |
|---------------------------|------|

#### ADR

|                           |      |
|---------------------------|------|
| Environmentally hazardous | : no |
|---------------------------|------|

#### RID

|                           |      |
|---------------------------|------|
| Environmentally hazardous | : no |
|---------------------------|------|

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### IMDG

Marine pollutant : no

### 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). : This product does not contain substances of very high concern.

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.

formaldehyde (Number on list 72, 28)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. P5c FLAMMABLE LIQUIDS

Occupational Illnesses (R-461-3, France) : 84, 43bis, 66bis, 66, 51

Installations classified for the protection of the environment (Environment Code R511-9) : 4331

### Other regulations:

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

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## ARADUR® 985 E-1 CH

|         |                |              |                                 |
|---------|----------------|--------------|---------------------------------|
| Version | Revision Date: | SDS Number:  | Date of last issue: 16.05.2023  |
| 2.1     | 19.01.2024     | 400001009416 | Date of first issue: 16.12.2015 |

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

|       |                                                                                                                                                                                     |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DSL   | : All components of this product are on the Canadian DSL                                                                                                                            |
| AIIC  | : All components are listed on the inventory, regulatory obligations/restrictions apply. Please contact your sales representative for more information before import into Australia |
| ENCS  | : On the inventory, or in compliance with the inventory                                                                                                                             |
| KECI  | : On the inventory, or in compliance with the inventory                                                                                                                             |
| PICCS | : On the inventory, or 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.

## SECTION 16: Other information

### Full text of H-Statements

|      |                                            |
|------|--------------------------------------------|
| H225 | : Highly flammable liquid and vapour.      |
| H226 | : Flammable liquid and vapour.             |
| H301 | : Toxic if swallowed.                      |
| H302 | : Harmful if swallowed.                    |
| H311 | : Toxic in contact with skin.              |
| H314 | : Causes severe skin burns and eye damage. |
| H315 | : Causes skin irritation.                  |
| H317 | : May cause an allergic skin reaction.     |
| H318 | : Causes serious eye damage.               |
| H319 | : Causes serious eye irritation.           |

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|        |                                                                              |
|--------|------------------------------------------------------------------------------|
| H331   | : Toxic if inhaled.                                                          |
| H334   | : May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335   | : May cause respiratory irritation.                                          |
| H336   | : May cause drowsiness or dizziness.                                         |
| H341   | : Suspected of causing genetic defects.                                      |
| H350   | : May cause cancer.                                                          |
| H361fd | : Suspected of damaging fertility. Suspected of damaging the unborn child.   |

### Full text of other abbreviations

|                     |                                                                                                                                   |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Acute Tox.          | : Acute toxicity                                                                                                                  |
| Carc.               | : Carcinogenicity                                                                                                                 |
| Eye Dam.            | : Serious eye damage                                                                                                              |
| Eye Irrit.          | : Eye irritation                                                                                                                  |
| Flam. Liq.          | : Flammable liquids                                                                                                               |
| Muta.               | : Germ cell mutagenicity                                                                                                          |
| Repr.               | : Reproductive toxicity                                                                                                           |
| Resp. Sens.         | : Respiratory sensitisation                                                                                                       |
| Skin Corr.          | : Skin corrosion                                                                                                                  |
| Skin Irrit.         | : Skin irritation                                                                                                                 |
| Skin Sens.          | : Skin sensitisation                                                                                                              |
| STOT SE             | : Specific target organ toxicity - single exposure                                                                                |
| 2000/39/EC          | : Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values              |
| 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 |
| FR VLE              | : France. Occupational Exposure Limits                                                                                            |
| 2000/39/EC / TWA    | : Limit Value - eight hours                                                                                                       |
| 2000/39/EC / STEL   | : Short term exposure limit                                                                                                       |
| 2004/37/EC / STEL   | : Short term exposure limit                                                                                                       |
| 2004/37/EC / TWA    | : Long term exposure limit                                                                                                        |
| FR VLE / VME        | : Time Weighted Average                                                                                                           |
| FR VLE / VLCT (VLE) | : Short Term Exposure Limit                                                                                                       |

### Further information

#### Classification of the mixture:

|              |        |
|--------------|--------|
| Flam. Liq. 3 | H226   |
| Eye Dam. 1   | H318   |
| Repr. 2      | H361fd |
| STOT SE 3    | H336   |
| STOT SE 3    | H335   |

#### Classification procedure:

|                                     |
|-------------------------------------|
| Based on product data or assessment |
| Calculation method                  |
| Calculation method                  |
| Calculation method                  |
| Calculation method                  |

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