

EPPA 220

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

1.1. Product identifier

Product name : EPPA 220
 Synonyms : Electrically conductive paint
 Registration number REACH : Not applicable (mixture)
 Product type REACH : Mixture

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

1.2.1 Relevant identified uses

Lacquer/varnish
 Professional use

1.2.2 Uses advised against

No uses advised against known

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

TYCO ELECTRONICS Raychem GmbH - Energy Division
 Finsinger Feld 1
 85521 Ottobrunn, Germany
 ☎ +49 89 608 90
 MSDSEnergy@te.com

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch):
 +32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

| Class | Category | Hazard statements |
|-----------------|------------|--|
| Flam. Liq. | category 3 | H226: Flammable liquid and vapour. |
| STOT RE | category 2 | H373: May cause damage to organs (central nervous system) through prolonged or repeated exposure if inhaled. |
| Eye Dam. | category 1 | H318: Causes serious eye damage. |
| STOT SE | category 3 | H336: May cause drowsiness or dizziness. |
| Aquatic Chronic | category 3 | H412: Harmful to aquatic life with long lasting effects. |

2.2. Label elements



Contains: n-butyl acetate; hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, aromatics 2-25% aromatics; ethyl (S)-2-hydroxypropionate.

Signal word Danger

H-statements

H226 Flammable liquid and vapour.
 H373 May cause damage to organs (central nervous system) through prolonged or repeated exposure if inhaled.
 H318 Causes serious eye damage.
 H336 May cause drowsiness or dizziness.
 H412 Harmful to aquatic life with long lasting effects.

P-statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P280 Wear protective gloves and eye protection/face protection.
 P260 Do not breathe vapours/mist.

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P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental information

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

May build up electrostatic charges: risk of ignition

Gas/vapour spreads at floor level: ignition hazard

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name REACH Registration No | CAS No EC No | Conc. (C) | Classification according to CLP | Note | Remark |
|--|------------------------|------------------|--|------------|-------------|
| n-butyl acetate 01-2119485493-29 | 123-86-4 204-658-1 | 25.01%<C< 50% | Flam. Liq. 3; H226 STOT SE 3; H336 | (1)(2)(10) | Constituent |
| 4-hydroxy-4-methylpentan-2-one 01-2119473975-21 | 123-42-2 204-626-7 | 10.01% <C<25% | Flam. Liq. 3; H226 Eye Irrit. 2; H319 | (1)(2)(10) | Constituent |
| hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, aromatics 2-25% aromatics 01-2119463586-28 | | 2.51% <C<10% | Flam. Liq. 3; H226 STOT RE 1; H372 Asp. Tox. 1; H304 STOT SE 3; H336 Aquatic Chronic 2; H411 | (1)(10) | Constituent |
| carbon black 01-2119384822-32 | 1333-86-4 215-609-9 | 2.51% <C<10% | | (2) | Constituent |
| ethyl (S)-2-hydroxypropionate | 687-47-8 211-694-1 | 2.51% <C<10% | Flam. Liq. 3; H226 Eye Dam. 1; H318 STOT SE 3; H335 | (1)(2)(10) | Constituent |

(1) For H-statements in full: see heading 16

(2) Substance with a Community workplace exposure limit

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

SECTION 4: First aid measures

4.1. Description of first aid measures

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Wash immediately with lots of water. Soap may be used. Take victim to a doctor if irritation persists.

After eye contact:

Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist.

After ingestion:

Rinse mouth with water. Do not induce vomiting. Consult a doctor/medical service if you feel unwell.

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

4.2.1 Acute symptoms

After inhalation:

EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Central nervous system depression. Headache. Nausea. Dizziness. Feeling of weakness. Narcosis. Disturbances of consciousness.

After skin contact:

ON CONTINUOUS EXPOSURE/CONTACT: Red skin. Dry skin. Cracking of the skin.

After eye contact:

Corrosion of the eye tissue.

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After ingestion:

Irritation of the gastric/intestinal mucosa. AFTER INGESTION OF HIGH QUANTITIES: Central nervous system depression. Symptoms similar to those listed under inhalation.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:

Small fire: Quick-acting ABC powder extinguisher, Quick-acting BC powder extinguisher, Quick-acting class B foam extinguisher, Quick-acting CO2 extinguisher.
Major fire: Class B foam (not alcohol-resistant).

5.1.2 Unsuitable extinguishing media:

Small fire: Water (quick-acting extinguisher, reel); risk of puddle expansion.
Major fire: Water; risk of puddle expansion.

5.2. Special hazards arising from the substance or mixture

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide).

5.3. Advice for firefighters

5.3.1 Instructions:

If exposed to fire cool the closed containers by spraying with water. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or

5.3.2 Special protective equipment for fire-fighters:

Gloves. Protective goggles. Head/neck protection. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Protective goggles. Head/neck protection. Protective clothing.

Suitable protective clothing

See heading 8.2

6.2. Environmental precautions

Contain released product. Dam up the liquid spill. Try to reduce evaporation. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1. Precautions for safe handling

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: use spark-/explosionproof appliances and lighting system. Insufficient ventilation: take precautions against electrostatic charges. Gas/vapour heavier than air at 20°C. Observe normal hygiene standards. Keep container tightly closed. Remove contaminated clothing immediately. Do not discharge the waste into the drain.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Storage temperature: 5 °C - 30 °C. Store at ambient temperature. Keep out of direct sunlight. Ventilation at floor level. Fireproof storeroom. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, ignition sources, oxidizing agents, (strong) acids, (strong) bases.

7.2.3 Suitable packaging material:

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Glass.

7.2.4 Non suitable packaging material:

No data available

7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

Belgium

| | | |
|--------------------------------|--|-----------------------|
| 4-Hydroxy-4-méthyl-2-pentanone | Time-weighted average exposure limit 8 h | 50 ppm |
| | Time-weighted average exposure limit 8 h | 241 mg/m ³ |
| Acétate de n-butyle | Time-weighted average exposure limit 8 h | 150 ppm |
| | Time-weighted average exposure limit 8 h | 723 mg/m ³ |
| | Short time value | 200 ppm |
| | Short time value | 964 mg/m ³ |
| Carbone (noir de) | Time-weighted average exposure limit 8 h | 3.5 mg/m ³ |

France

| | | |
|---------------------|--|-----------------------|
| Acétate de n-butyle | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 150 ppm |
| | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 710 mg/m ³ |
| | Short time value (VL: Valeur non réglementaire indicative) | 200 ppm |
| | Short time value (VL: Valeur non réglementaire indicative) | 940 mg/m ³ |
| Diacétone-alcool | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 50 ppm |
| | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 240 mg/m ³ |
| Noir de carbone | Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative) | 3.5 mg/m ³ |

Germany

| | | |
|--------------------------------|---|-----------------------|
| 4-Hydroxy-4-methyl-pentan-2-on | Time-weighted average exposure limit 8 h (TRGS 900) | 20 ppm |
| | Time-weighted average exposure limit 8 h (TRGS 900) | 96 mg/m ³ |
| n-Butylacetat | Time-weighted average exposure limit 8 h (TRGS 900) | 62 ppm |
| | Time-weighted average exposure limit 8 h (TRGS 900) | 300 mg/m ³ |

UK

| | | |
|--------------------------------|---|-----------------------|
| 4-Hydroxy-4-methylpentan-2-one | Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005)) | 50 ppm |
| | Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005)) | 241 mg/m ³ |
| | Short time value (Workplace exposure limit (EH40/2005)) | 75 ppm |
| | Short time value (Workplace exposure limit (EH40/2005)) | 362 mg/m ³ |
| Butyl acetate | Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005)) | 150 ppm |
| | Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005)) | 724 mg/m ³ |
| | Short time value (Workplace exposure limit (EH40/2005)) | 200 ppm |
| | Short time value (Workplace exposure limit (EH40/2005)) | 966 mg/m ³ |
| Carbon black | Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005)) | 3.5 mg/m ³ |
| | Short time value (Workplace exposure limit (EH40/2005)) | 7 mg/m ³ |

USA (TLV-ACGIH)

| | | |
|-----------------------------|--|-------------------------|
| Butyl acetates, all isomers | Time-weighted average exposure limit 8 h (TLV - Adopted Value) | 50 ppm |
| | Short time value (TLV - Adopted Value) | 150 ppm |
| Carbon black | Time-weighted average exposure limit 8 h (TLV - Adopted Value) | 3 mg/m ³ (I) |
| Diacetone alcohol | Time-weighted average exposure limit 8 h (TLV - Adopted Value) | 50 ppm |

(I): Inhalable fraction

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b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

| Product name | Test | Number |
|--|-------|--------|
| Butyl acetate (Volatile Organic compounds) | NIOSH | 2549 |
| Carbon Black | NIOSH | 5000 |
| Carbon Black | NIOSH | 5100 |
| Carbon Black | OSHA | ID 196 |
| diacetone alcohol (Alcohols Combined) | NIOSH | 1405 |
| Diacetone Alcohol (Alcohols III) | NIOSH | 1402 |
| Diacetone Alcohol | OSHA | 7 |
| n-Butyl Acetate (Esters I) | NIOSH | 1450 |
| n-Butyl Acetate | OSHA | 1009 |

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL/DMEL - Workers

n-butyl acetate

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|-----------------------|--------|
| DNEL | Long-term systemic effects inhalation | 300 mg/m ³ | |
| | Acute systemic effects inhalation | 600 mg/m ³ | |
| | Long-term local effects inhalation | 300 mg/m ³ | |
| | Acute local effects inhalation | 600 mg/m ³ | |
| | Long-term systemic effects dermal | 11 mg/kg bw/day | |
| | Acute systemic effects dermal | 11 mg/kg bw/day | |

4-hydroxy-4-methylpentan-2-one

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|------------------------|--------|
| DNEL | Long-term systemic effects inhalation | 59.2 mg/m ³ | |
| | Acute local effects inhalation | 240 mg/m ³ | |
| | Long-term systemic effects dermal | 840 mg/kg bw/day | |

hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, aromatics 2-25% aromatics

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|-----------------------|--------|
| DNEL | Long-term systemic effects inhalation | 330 mg/m ³ | |
| | Long-term systemic effects dermal | 44 mg/kg bw/day | |

carbon black

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|---------------------|--------|
| DNEL | Long-term systemic effects inhalation | 2 mg/m ³ | |
| | Long-term local effects inhalation | 2 mg/m ³ | |

DNEL/DMEL - General population

n-butyl acetate

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|------------------------|--------|
| DNEL | Long-term systemic effects inhalation | 35.7 mg/m ³ | |
| | Acute systemic effects inhalation | 300 mg/m ³ | |
| | Long-term local effects inhalation | 35.7 mg/m ³ | |
| | Acute local effects inhalation | 300 mg/m ³ | |
| | Long-term systemic effects dermal | 6 mg/kg bw/day | |
| | Acute systemic effects dermal | 6 mg/kg bw/day | |
| | Long-term systemic effects oral | 2 mg/kg bw/day | |
| | Acute systemic effects oral | 2 mg/kg bw/day | |

4-hydroxy-4-methylpentan-2-one

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|------------------------|--------|
| DNEL | Long-term systemic effects inhalation | 10.4 mg/m ³ | |
| | Long-term systemic effects dermal | 60 mg/kg bw/day | |
| | Long-term systemic effects oral | 3 mg/kg bw/day | |

hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, aromatics 2-25% aromatics

| Effect level (DNEL/DMEL) | Type | Value | Remark |
|--------------------------|---------------------------------------|----------------------|--------|
| DNEL | Long-term systemic effects inhalation | 71 mg/m ³ | |
| | Long-term systemic effects dermal | 26 mg/kg bw/day | |
| | Long-term systemic effects oral | 26 mg/kg bw/day | |

PNEC

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n-butyl acetate

| Compartment | Value | Remark |
|-----------------------|--------------------------|--------|
| Fresh water | 0.18 mg/l | |
| Marine water | 0.018 mg/l | |
| Fresh water sediment | 0.981 mg/kg sediment dw | |
| Marine water sediment | 0.0981 mg/kg sediment dw | |
| Soil | 0.0903 mg/kg soil dw | |
| STP | 35.6 mg/l | |

4-hydroxy-4-methylpentan-2-one

| Compartment | Value | Remark |
|------------------------------|------------------------|--------|
| Fresh water | 2 mg/l | |
| Marine water | 0.2 mg/l | |
| Aqua (intermittent releases) | 1 mg/l | |
| STP | 10 mg/l | |
| Fresh water sediment | 9.06 mg/kg sediment dw | |
| Marine water sediment | 0.91 mg/kg sediment dw | |
| Soil | 0.63 mg/kg soil dw | |

carbon black

| Compartment | Value | Remark |
|--------------|--------|--------|
| Fresh water | 5 mg/l | |
| Marine water | 5 mg/l | |

ethyl (S)-2-hydroxypropionate

| Compartment | Value | Remark |
|------------------------------|-------------------------|--------|
| Fresh water | 0.32 mg/l | |
| Aqua (intermittent releases) | 3.2 mg/l | |
| Marine water | 0.032 mg/l | |
| Fresh water sediment | 1.66 mg/kg sediment dw | |
| Marine water sediment | 0.166 mg/kg sediment dw | |
| Soil | 0.145 mg/kg soil dw | |

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: use spark-/explosionproof appliances and lighting system. Insufficient ventilation: take precautions against electrostatic charges. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

8.2.2 Individual protection measures, such as personal protective equipment

Observe normal hygiene standards. Keep container tightly closed. Do not eat, drink or smoke during work.

a) Respiratory protection:

Wear gas mask with filter type A if conc. in air > exposure limit.

b) Hand protection:

Gloves.

- materials (good resistance)

Nitrile rubber.

c) Eye protection:

Protective goggles.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|-----------------|-------------------------|
| Physical form | Liquid |
| Odour | Solvent-like odour |
| Odour threshold | No data available |
| Colour | Black |
| Particle size | Not applicable (liquid) |

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| | |
|---------------------------|--|
| Explosion limits | 0.6 - 11.4 vol % |
| Flammability | Flammable liquid and vapour. |
| Log Kow | Not applicable (mixture) |
| Dynamic viscosity | No data available |
| Kinematic viscosity | No data available |
| Melting point | No data available |
| Boiling point | 110 °C |
| Flash point | ≥ 23 °C |
| Evaporation rate | No data available |
| Relative vapour density | > 2 |
| Vapour pressure | 1.1 hPa ; 20 °C 55 hPa ; 50 °C |
| Solubility | Water ; insoluble |
| Relative density | 1.1 |
| Decomposition temperature | No data available |
| Auto-ignition temperature | 201 °C |
| Explosive properties | No chemical group associated with explosive properties |
| Oxidising properties | No chemical group associated with oxidising properties |
| pH | No data available |

9.2. Other information

| | |
|----------------------------------|-------------------|
| Extrapolated kinematic viscosity | 91 seconds ; 4 mm |
| Absolute density | 1092 kg/m³ |

SECTION 10: Stability and reactivity

10.1. Reactivity

May build up electrostatic charges: risk of ignition. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts exothermically with (strong) oxidizers and (strong) acids/bases.

10.4. Conditions to avoid

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: use spark-/explosionproof appliances and lighting system. Insufficient ventilation: take precautions against electrostatic charges.

10.5. Incompatible materials

Oxidizing agents, (strong) acids, (strong) bases.

10.6. Hazardous decomposition products

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1.1 Test results

Acute toxicity

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No (test)data on the mixture available

Judgement is based on the relevant ingredients

n-butyl acetate

| Route of exposure | Parameter | Method | Value | Exposure time | Species | Value determination | Remark |
|-------------------|-----------|------------------------|------------------------------------|---------------|----------------------|---------------------|--------|
| Oral | LD50 | Equivalent to OECD 423 | 10760 mg/kg bw - 12789 mg/kg bw | | Rat (male/female) | Experimental value | |
| Dermal | LD50 | Equivalent to OECD 402 | 14112 mg/kg bw | | Rabbit (male/female) | Experimental value | |

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4-hydroxy-4-methylpentan-2-one

| Route of exposure | Parameter | Method | Value | Exposure time | Species | Value determination | Remark |
|----------------------|-----------|------------------------|-----------------|---------------|-------------------|---------------------|--------|
| Oral | LD50 | Equivalent to OECD 401 | 3002 mg/kg bw | | Rat (male/female) | Experimental value | |
| Dermal | LD50 | Equivalent to OECD 402 | > 1875 mg/kg bw | 24 h | Rat (male/female) | Experimental value | |
| Inhalation (vapours) | LC0 | Equivalent to OECD 403 | ≥ 7.6 mg/l air | 4 h | Rat (male/female) | Experimental value | |

carbon black

| Route of exposure | Parameter | Method | Value | Exposure time | Species | Value determination | Remark |
|-------------------|-----------|------------------------|----------------|---------------|-------------------|---------------------|--------|
| Oral | LD50 | Equivalent to OECD 401 | > 8000 mg/kg | | Rat (male/female) | Experimental value | |
| Dermal | LD50 | | > 3000 mg/kg | | Rabbit | Literature study | |
| Inhalation | LC50 | | > 4.6 mg/l air | 4 h | Rat | Experimental value | |

ethyl (S)-2-hydroxypropionate

| Route of exposure | Parameter | Method | Value | Exposure time | Species | Value determination | Remark |
|----------------------|-----------|----------|-----------------|---------------|-------------------|---------------------|--------|
| Oral | LD50 | OECD 401 | > 2000 mg/kg bw | | Rat (male/female) | Experimental value | |
| Dermal | LD50 | | > 5000 mg/kg | | Rabbit | Literature study | |
| Inhalation (vapours) | LC50 | OECD 403 | > 5.4 mg/l air | 4 h | Rat (male/female) | Experimental value | |

Conclusion

Not classified for acute toxicity

Corrosion/irritation

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No (test)data on the mixture available

Classification is based on the relevant ingredients

n-butyl acetate

| Route of exposure | Result | Method | Exposure time | Time point | Species | Value determination | Remark |
|-------------------|----------------|------------------------|---------------|------------------|---------|---------------------|--------|
| Eye | Not irritating | OECD 405 | | 24; 48; 72 hours | Rabbit | Experimental value | |
| Dermal | Not irritating | Equivalent to OECD 404 | | 24; 48; 72 hours | Rabbit | Experimental value | |

4-hydroxy-4-methylpentan-2-one

| Route of exposure | Result | Method | Exposure time | Time point | Species | Value determination | Remark |
|-------------------|---------------------|------------------------|---------------|------------------|---------|---------------------|--------|
| Eye | Irritating | OECD 405 | | 24; 48; 72 hours | Rabbit | Experimental value | |
| Skin | Slightly irritating | Equivalent to OECD 404 | 24 h | 24; 72 hours | Rabbit | Experimental value | |
| Inhalation | Irritating | Human observation | 15 minutes | | Human | Weight of evidence | |

Classification of this substance according to Annex VI is debatable as it does not correspond to the conclusion from the test

carbon black

| Route of exposure | Result | Method | Exposure time | Time point | Species | Value determination | Remark |
|-------------------|----------------|------------------------|---------------|------------------------|---------|---------------------|--------|
| Eye | Not irritating | OECD 405 | | 24; 48; 72 hrs; 4 days | Rabbit | Experimental value | |
| Skin | Not irritating | Equivalent to OECD 404 | 24 h | | Rabbit | Experimental value | |

ethyl (S)-2-hydroxypropionate

| Route of exposure | Result | Method | Exposure time | Time point | Species | Value determination | Remark |
|--------------------------------|-------------------|----------|---------------|------------|----------------------|---------------------|--------|
| Not applicable (in vitro test) | Not applicable | | 10 seconds | 4 hours | Isolated chicken eye | Expert judgement | |
| Skin | Not irritating | OECD 404 | 4 h | | Rabbit | Experimental value | |
| Inhalation (vapours) | Highly irritating | OECD 403 | 4 h | | Rat | Experimental value | |

Conclusion

Causes serious eye damage.

Not classified as irritating to the skin

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

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No (test)data on the mixture available

Judgement is based on the relevant ingredients

n-butyl acetate

| Route of exposure | Result | Method | Exposure time | Observation time point | Species | Value determination | Remark |
|-------------------|-----------------|------------------------|---------------|------------------------|------------|---------------------|--------|
| Skin | Not sensitizing | Equivalent to OECD 408 | | | Guinea pig | Experimental value | |

4-hydroxy-4-methylpentan-2-one

| Route of exposure | Result | Method | Exposure time | Observation time point | Species | Value determination | Remark |
|-------------------|-----------------|----------|---------------|------------------------|--------------------------|---------------------|--------|
| Skin | Not sensitizing | OECD 406 | | 24; 48 hours | Guinea pig (male/female) | Experimental value | |

carbon black

| Route of exposure | Result | Method | Exposure time | Observation time point | Species | Value determination | Remark |
|-------------------|-----------------|----------|---------------|------------------------|------------------|---------------------|--------|
| Skin | Not sensitizing | OECD 406 | | | Hamster (female) | Experimental value | |
| Inhalation | Not sensitizing | | | | Mouse (female) | Experimental value | |

ethyl (S)-2-hydroxypropionate

| Route of exposure | Result | Method | Exposure time | Observation time point | Species | Value determination | Remark |
|-------------------|-----------------|----------|---------------|------------------------|----------------|---------------------|--------|
| Skin | Not sensitizing | OECD 429 | | | Mouse (female) | Experimental value | |

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

EPPA 220

No (test)data on the mixture available

Classification is based on the relevant ingredients

n-butyl acetate

| Route of exposure | Parameter | Method | Value | Organ | Effect | Exposure time | Species | Value determination |
|-------------------|-----------|------------------|---------|-------|-----------------------------|-------------------------------|-------------------|---------------------|
| Inhalation | NOAEC | EPA OTS 798.2450 | 500 ppm | | No adverse systemic effects | 13 weeks (daily, 5 days/week) | Rat (male/female) | Experimental value |

4-hydroxy-4-methylpentan-2-one

| Route of exposure | Parameter | Method | Value | Organ | Effect | Exposure time | Species | Value determination |
|----------------------|------------------------|------------------------|------------------------------|-------------------|-----------------------------|-------------------------------|-------------------|---------------------|
| Oral (stomach tube) | NOAEL | OECD 422 | 100 mg/kg bw/day | | No effect | 41 day(s) - 45 day(s) | Rat (male/female) | Experimental value |
| Dermal | | | | | | | | Data waiving |
| Inhalation (vapours) | NOAEC systemic effects | Equivalent to OECD 412 | 4685 mg/m ³ air | | No adverse systemic effects | 6 weeks (6h/day, 5 days/week) | Rat (male/female) | Experimental value |
| Inhalation (vapours) | NOAEC local effects | Equivalent to OECD 412 | ≥ 4685 mg/m ³ air | Respiratory tract | No irritation | 6 weeks (6h/day, 5 days/week) | Rat (male/female) | Experimental value |
| Inhalation (vapours) | NOAEL | Equivalent to OECD 412 | 1041 mg/m ³ air | | No adverse systemic effects | 6 weeks (6h/day, 5 days/week) | Rat (male/female) | Experimental value |

hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, aromatics 2-25% aromatics

| Route of exposure | Parameter | Method | Value | Organ | Effect | Exposure time | Species | Value determination |
|---------------------|------------|------------------------|----------------------------|------------------------|--------------------|-----------------|-------------------|---------------------|
| Oral (stomach tube) | NOAEL | Equivalent to OECD 408 | 1056 mg/kg/d | | No effect | 30 day(s) | Rat (male/female) | Experimental value |
| Dermal | NOAEL | Equivalent to OECD 411 | ≥ 495 mg/kg bw/day | | No effect | 90 day(s) | Rat (male/female) | Read-across |
| Inhalation | NOAEC | | 570 mg/m ³ air | Central nervous system | No effect | 4 week(s) | Human (male) | Read-across |
| Inhalation | NOAEC | | 600 mg/m ³ air | Central nervous system | No effect | 3 days (8h/day) | Rat (male) | Read-across |
| Inhalation | Dose level | | 2400 mg/m ³ air | | neurotoxic effects | 3 days (8h/day) | Rat (male) | Read-across |

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Product number: 36592

Revision number: 0400

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EPPA 220

carbon black

| Route of exposure | Parameter | Method | Value | Organ | Effect | Exposure time | Species | Value determination |
|----------------------|-----------|--------------------------|----------------|-------|----------------|---------------------------------|---------------------|---------------------|
| Oral (diet) | NOEL | | > 100000 mg/kg | | No effect | 12 month(s) - 18 month(s) | Mouse (male/female) | |
| Dermal | NOEL | | 20 % | | No effect | 12 month(s) - 18 month(s) | Mouse (male/female) | Experimental value |
| Inhalation (aerosol) | NOEC | Subchronic toxicity test | 1 mg/m³ air | Lungs | No effect | 13 weeks (6h/day, 5 days/week) | Rat (female) | Experimental value |
| Inhalation (aerosol) | LOEC | Subchronic toxicity test | 7 mg/m³ air | Lungs | Pneumonia | 13 weeks (6h/day, 5 days/week) | Rat (female) | Experimental value |
| Inhalation (aerosol) | LOAEC | Equivalent to OECD 452 | 2.5 mg/m³ air | | Histopathology | 104 weeks (6h/day, 5 days/week) | Rat (male/female) | Experimental value |

ethyl (S)-2-hydroxypropionate

| Route of exposure | Parameter | Method | Value | Organ | Effect | Exposure time | Species | Value determination |
|----------------------|-----------|----------|---------------|-------|-----------|-------------------------------|-------------------|---------------------|
| Inhalation (vapours) | NOAEL | OECD 412 | 200 mg/m³ air | | No effect | 4 weeks (6h/day, 5 days/week) | Rat (male/female) | Experimental value |

Conclusion

May cause drowsiness or dizziness.

May cause damage to organs (central nervous system) through prolonged or repeated exposure if inhaled.

Mutagenicity (in vitro)

EPPA 220

No (test)data on the mixture available

n-butyl acetate

| Result | Method | Test substrate | Effect | Value determination |
|----------|----------|--|--------|---------------------|
| Negative | OECD 471 | Bacteria (S.typhimurium) | | Experimental value |
| Negative | OECD 473 | Chinese hamster lung fibroblasts (V79) | | Experimental value |

4-hydroxy-4-methylpentan-2-one

| Result | Method | Test substrate | Effect | Value determination |
|---|----------|-------------------------------|--------|---------------------|
| Negative with metabolic activation, negative without metabolic activation | OECD 471 | Bacteria (S.typhimurium) | | Experimental value |
| Negative with metabolic activation, negative without metabolic activation | OECD 473 | CHL/IU cells | | Experimental value |
| Negative | OECD 476 | Mouse (lymphoma L5178Y cells) | | Experimental value |

carbon black

| Result | Method | Test substrate | Effect | Value determination |
|---|----------|-------------------------------|-----------|---------------------|
| Negative with metabolic activation | OECD 471 | Bacteria (S.typhimurium) | No effect | Experimental value |
| Negative with metabolic activation, negative without metabolic activation | OECD 479 | Chinese hamster ovary (CHO) | No effect | Experimental value |
| Negative with metabolic activation, negative without metabolic activation | OECD 476 | Mouse (lymphoma L5178Y cells) | No effect | Experimental value |

ethyl (S)-2-hydroxypropionate

| Result | Method | Test substrate | Effect | Value determination |
|----------|----------|-------------------------------|-----------|---------------------|
| Negative | OECD 473 | Human lymphocytes | No effect | Experimental value |
| Negative | OECD 476 | Mouse (lymphoma L5178Y cells) | No effect | Experimental value |
| Negative | OECD 471 | Bacteria (S.typhimurium) | No effect | Experimental value |

Mutagenicity (in vivo)

EPPA 220

No (test)data on the mixture available

Judgement is based on the relevant ingredients

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EPPA 220

n-butyl acetate

| Result | Method | Exposure time | Test substrate | Organ | Value determination |
|----------|----------|---------------|---------------------|-------|---------------------|
| Negative | OECD 474 | | Mouse (male/female) | | Read-across |

carbon black

| Result | Method | Exposure time | Test substrate | Organ | Value determination |
|----------|--------------------------------------|---------------|---------------------------------------|-------|---------------------|
| Negative | Drosophila SLRL test (gene mutation) | | Drosophila melanogaster (male/female) | | Experimental value |
| Positive | | | Rat (female) | | Literature study |

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

EPPA 220

No (test)data on the mixture available

Judgement is based on the relevant ingredients

4-hydroxy-4-methylpentan-2-one

| Route of exposure | Parameter | Method | Value | Exposure time | Species | Effect | Organ | Value determination |
|----------------------|-----------|----------|----------------------------|---------------------------------|-------------------|------------------------|--------|---------------------|
| Inhalation (vapours) | NOAEC | OECD 451 | 1847 mg/m ³ air | 104 weeks (6h/day, 5 days/week) | Rat (male/female) | No carcinogenic effect | Kidney | Read-across |

carbon black

| Route of exposure | Parameter | Method | Value | Exposure time | Species | Effect | Organ | Value determination |
|-------------------|-----------|------------------------|--|---------------------------|---------------------|------------------------|-------|---------------------|
| Inhalation | NOAEC | Equivalent to OECD 451 | 7.5 mg/m ³ air - 12 mg/m ³ air | 23 month(s) | Mouse (female) | No carcinogenic effect | Lungs | Experimental value |
| Dermal | NOEC | Equivalent to OECD 451 | 60 % | 9 month(s) - 24 month(s) | Mouse | No carcinogenic effect | | Experimental value |
| Oral | NOEL | | 10000 mg/kg food | 12 month(s) - 18 month(s) | Mouse (male/female) | No carcinogenic effect | | Experimental value |

Conclusion

Not classified for carcinogenicity

Reproductive toxicity

EPPA 220

No (test)data on the mixture available

Judgement is based on the relevant ingredients

n-butyl acetate

| | Parameter | Method | Value | Exposure time | Species | Effect | Organ | Value determination |
|------------------------|-----------|------------------------|----------|---------------|-------------------|---|-------|---------------------|
| Developmental toxicity | LOAEC | Equivalent to OECD 414 | 1500 ppm | | Rat | Body weight, organ weight, food consumption | | Experimental value |
| | NOAEC | Equivalent to OECD 414 | 1500 ppm | | Rabbit | | | Experimental value |
| Effects on fertility | NOAEC | OECD 416 | 2000 ppm | > 90 day(s) | Rat (male/female) | No effect | | Experimental value |

4-hydroxy-4-methylpentan-2-one

| | Parameter | Method | Value | Exposure time | Species | Effect | Organ | Value determination |
|------------------------|-----------|------------------------|----------------------------|----------------------------|-------------------|-----------|--------|---------------------|
| Developmental toxicity | NOAEC | Equivalent to OECD 414 | 4106 mg/m ³ | 10 days (gestation, daily) | Rat (male/female) | No effect | Foetus | Read-across |
| Maternal toxicity | NOAEL | Equivalent to OECD 414 | 4106 mg/m ³ air | 10 day(s) | Rat | No effect | | Read-across |
| Effects on fertility | NOAEL (P) | OECD 422 | 300 mg/kg bw/day | 41 day(s) - 45 day(s) | Rat (male/female) | No effect | | Experimental value |

carbon black

| | Parameter | Method | Value | Exposure time | Species | Effect | Organ | Value determination |
|------------------------|-----------|------------------------|-------|---------------|---------|-----------|-------|---------------------|
| Developmental toxicity | NOAEL | Equivalent to OECD 414 | 10 % | 10 day(s) | Rat | No effect | | Read-across |
| Maternal toxicity | NOAEL | Equivalent to OECD 414 | 10 % | | Rat | No effect | | Read-across |

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EPPA 220

ethyl (S)-2-hydroxypropionate

| | Parameter | Method | Value | Exposure time | Species | Effect | Organ | Value determination |
|------------------------|-----------|--------|---------------------------------------|------------------|---------|-----------|--------|---------------------|
| Developmental toxicity | NOAEL | Other | > 3619 mg/kg bw/day | 10 days (6h/day) | Rat | No effect | Foetus | Experimental value |
| Maternal toxicity | NOAEL | Other | 1551 mg/kg bw/day - 3619 mg/kg bw/day | 10 days (6h/day) | Rat | No effect | | Experimental value |

Conclusion

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

EPPA 220

No (test)data on the mixture available

n-butyl acetate

| Parameter | Method | Value | Organ | Effect | Exposure time | Species | Value determination |
|-----------|------------------|----------|-------|-----------------------|---------------|-------------------|---------------------|
| NOEC | EPA OTS 798.6050 | 1500 ppm | | Hypoactivity | 6 h | Rat (male/female) | Experimental value |
| NOAEC | EPA OTS 798.6050 | 500 ppm | | no neurotoxic effects | 13 week(s) | Rat (male/female) | Experimental value |

hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, aromatics 2-25% aromatics

| Parameter | Method | Value | Organ | Effect | Exposure time | Species | Value determination |
|-----------|--------|-------|-------|--------------------------|---------------|---------|---------------------|
| | | | | Skin dryness or cracking | | | Literature study |

Conclusion

Repeated exposure may cause skin dryness or cracking.

Chronic effects from short and long-term exposure

EPPA 220

No effects known.

SECTION 12: Ecological information

12.1. Toxicity

EPPA 220

No (test)data on the mixture available

Classification is based on the relevant ingredients

n-butyl acetate

| | Parameter | Method | Value | Duration | Species | Test design | Fresh/salt water | Value determination |
|---|-----------|------------------------|------------|-----------|-------------------------|---------------------|------------------|---------------------|
| Acute toxicity fishes | LC50 | Equivalent to OECD 203 | 18 mg/l | 96 h | Pimephales promelas | Flow-through system | Fresh water | Experimental value |
| Acute toxicity crustacea | EC50 | | 44 mg/l | 48 h | Daphnia sp. | Static system | Fresh water | Experimental value |
| Toxicity algae and other aquatic plants | EC50 | | 674.7 mg/l | 72 h | Desmodesmus subspicatus | Static system | Fresh water | Experimental value |
| | NOEC | | 200 mg/l | 72 h | Desmodesmus subspicatus | Static system | Fresh water | Experimental value |
| Long-term toxicity aquatic crustacea | NOEC | OECD 211 | 23 mg/l | 21 day(s) | Daphnia magna | | Fresh water | Read-across |

| | Parameter | Method | Value | Duration | Species | Value determination |
|-----------------------------|-----------|------------------------|----------------------|-----------|----------------|---------------------|
| Toxicity terrestrial plants | EC50 | Equivalent to OECD 208 | > 1000 mg/kg soil dw | 14 day(s) | Lactuca sativa | Experimental value |

EPPA 220

4-hydroxy-4-methylpentan-2-one

| | Parameter | Method | Value | Duration | Species | Test design | Fresh/salt water | Value determination |
|---|-----------|----------|-------------|-----------|---------------------------------|--------------------|------------------|-------------------------|
| Acute toxicity fishes | LC50 | OECD 203 | > 100 mg/l | 96 h | Oryzias latipes | Semi-static system | Fresh water | Experimental value; GLP |
| Acute toxicity crustacea | EC50 | OECD 202 | > 1000 mg/l | 48 h | Daphnia magna | Semi-static system | Fresh water | Experimental value; GLP |
| Toxicity algae and other aquatic plants | ErC50 | OECD 201 | > 1000 mg/l | 72 h | Pseudokirchneriella subcapitata | Static system | Fresh water | Experimental value; GLP |
| Long-term toxicity fish | | | | | | | | Data waiving |
| Long-term toxicity aquatic crustacea | NOEC | OECD 211 | 100 mg/l | 21 day(s) | Daphnia magna | Semi-static system | Fresh water | Experimental value; GLP |
| Toxicity aquatic micro-organisms | EC0 | | 825 mg/l | 16 h | Pseudomonas putida | Static system | Fresh water | Experimental value |
| | EC50 | OECD 209 | > 1000 mg/l | 3 h | Activated sludge | Static system | Fresh water | Experimental value; GLP |

hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, aromatics 2-25% aromatics

| | Parameter | Method | Value | Duration | Species | Test design | Fresh/salt water | Value determination |
|--------------------------------------|-----------|----------|------------|-----------|---------------|--------------------|------------------|---------------------------|
| Long-term toxicity aquatic crustacea | NOEC | OECD 211 | 0.097 mg/l | 21 day(s) | Daphnia magna | Semi-static system | Fresh water | Read-across; Reproduction |

carbon black

| | Parameter | Method | Value | Duration | Species | Test design | Fresh/salt water | Value determination |
|---|-----------|----------|--------------|----------|-------------------------|--------------------|------------------|---------------------|
| Acute toxicity fishes | LC50 | OECD 203 | > 1000 mg/l | 96 h | Brachydanio rerio | | | Literature study |
| | LC0 | OECD 203 | 1000 mg/l | 96 h | Brachydanio rerio | Semi-static system | Fresh water | Experimental value |
| Acute toxicity crustacea | EC50 | OECD 202 | > 5600 mg/l | 24 h | Daphnia magna | Static system | Fresh water | Experimental value |
| Toxicity algae and other aquatic plants | EC50 | OECD 201 | > 10000 mg/l | 72 h | Scenedesmus subspicatus | Static system | Fresh water | Experimental value |

ethyl (S)-2-hydroxypropionate

| | Parameter | Method | Value | Duration | Species | Test design | Fresh/salt water | Value determination |
|---|-----------|----------|-------------|----------|---------------------------------|--------------------|------------------|---|
| Acute toxicity fishes | LC50 | OECD 203 | 320 mg/l | 96 h | Brachydanio rerio | Semi-static system | Fresh water | Experimental value; Nominal concentration |
| Acute toxicity crustacea | EC50 | OECD 202 | 683 mg/l | 48 h | Daphnia magna | Static system | Fresh water | Experimental value; GLP |
| Toxicity algae and other aquatic plants | ErC50 | OECD 201 | 3500 mg/l | 72 h | Pseudokirchneriella subcapitata | Semi-static system | Fresh water | Experimental value; Nominal concentration |
| Long-term toxicity fish | | | | | | | | Data waiving |
| Long-term toxicity aquatic crustacea | | | | | | | | Data waiving |
| Toxicity aquatic micro-organisms | NOEC | OECD 209 | ≥ 1000 mg/l | 3 h | Activated sludge | Static system | Fresh water | Experimental value; GLP |

Conclusion

Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

n-butyl acetate

Biodegradation water

| Method | Value | Duration | Value determination |
|-------------------------------|-------|-----------|---------------------|
| OECD 301D: Closed Bottle Test | 83 % | 28 day(s) | Experimental value |

Phototransformation air (DT50 air)

| Method | Value | Conc. OH-radicals | Value determination |
|--------------|------------|-------------------------|---------------------|
| AOPWIN v1.92 | 3.3 day(s) | 500000 /cm ³ | Experimental value |

4-hydroxy-4-methylpentan-2-one

Biodegradation water

| Method | Value | Duration | Value determination |
|------------------------------------|---------|-----------|---------------------|
| Equivalent or similar to OECD 301A | 98.51 % | 28 day(s) | Experimental value |

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EPPA 220

hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, aromatics 2-25% aromatics

Biodegradation water

| Method | Value | Duration | Value determination |
|---|-------------|-----------|---------------------|
| OECD 301F: Manometric Respirometry Test | 74.7 %; GLP | 28 day(s) | Experimental value |

ethyl (S)-2-hydroxypropionate

Biodegradation water

| Method | Value | Duration | Value determination |
|---------------|-----------|-----------|---------------------|
| EU Method C.5 | 85 %; GLP | 28 day(s) | Experimental value |

Phototransformation air (DT50 air)

| Method | Value | Conc. OH-radicals | Value determination |
|--------|-------------|-------------------|---------------------|
| | 2.63 day(s) | | QSAR |

Biodegradation soil

| Method | Value | Duration | Value determination |
|--------|-------|----------|---------------------|
| | | | Data waiving |

Half-life water (t1/2 water)

| Method | Value | Primary degradation/mineralisation | Value determination |
|--------|-------|------------------------------------|---------------------|
| | | | Data waiving |

Conclusion

Does not contain any not readily biodegradable component(s)

12.3. Bioaccumulative potential

EPPA 220

Log Kow

| Method | Remark | Value | Temperature | Value determination |
|--------|--------------------------|-------|-------------|---------------------|
| | Not applicable (mixture) | | | |

n-butyl acetate

BCF fishes

| Parameter | Method | Value | Duration | Species | Value determination |
|-----------|--------|-------|----------|---------|---------------------|
| BCF | | 15.3 | | | Calculated value |

Log Kow

| Method | Remark | Value | Temperature | Value determination |
|----------|--------|-------|-------------|---------------------|
| OECD 117 | | 2.3 | 25 °C | Test data |

4-hydroxy-4-methylpentan-2-one

Log Kow

| Method | Remark | Value | Temperature | Value determination |
|------------------------|--------|-------|-------------|---------------------|
| Equivalent to OECD 117 | | 1.9 | | Read-across |

hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, aromatics 2-25% aromatics

Log Kow

| Method | Remark | Value | Temperature | Value determination |
|--------|-------------------|-------|-------------|---------------------|
| | No data available | | | |

carbon black

Log Kow

| Method | Remark | Value | Temperature | Value determination |
|--------|-------------------|-------|-------------|---------------------|
| | No data available | | | |

ethyl (S)-2-hydroxypropionate

BCF fishes

| Parameter | Method | Value | Duration | Species | Value determination |
|-----------|--------|-------|----------|---------|---------------------|
| | | | | | Data waiving |

Log Kow

| Method | Remark | Value | Temperature | Value determination |
|--------|--------|-------|-------------|---------------------|
| | | 0.31 | 20 °C | QSAR |

Conclusion

No straightforward conclusion can be drawn based upon the available numerical values

12.4. Mobility in soil

EPPA 220

n-butyl acetate

(log) Koc

| Parameter | Method | Value | Value determination |
|-----------|-------------------|---------------|---------------------|
| log Koc | SRC PCKOCWIN v2.0 | 1.268 - 1.844 | QSAR |

Volatility (Henry's Law constant H)

| Value | Method | Temperature | Remark | Value determination |
|-----------------------------|--------|-------------|--------|---------------------|
| 28.5 Pa.m ³ /mol | | 25 °C | | Experimental value |

ethyl (S)-2-hydroxypropionate

(log) Koc

| Parameter | Method | Value | Value determination |
|-----------|--------|-------|---------------------|
| | | | Data waiving |

Percent distribution

| Method | Fraction air | Fraction biota | Fraction sediment | Fraction soil | Fraction water | Value determination |
|------------------|--------------|----------------|-------------------|---------------|----------------|---------------------|
| Mackay level III | 92 % | | 0 % | 6.6 % | 1.4 % | Calculated value |

Conclusion

Contains component(s) with potential for mobility in the soil

12.5. Results of PBT and vPvB assessment

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006.

12.6. Other adverse effects

EPPA 220

Fluorinated greenhouse gases (Regulation (EU) No 517/2014)

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

n-butyl acetate

Ground water

Ground water pollutant

4-hydroxy-4-methylpentan-2-one

Ground water

Ground water pollutant

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

08 01 11* (wastes from MFSU and removal of paint and varnish: waste paint and varnish containing organic solvents or other hazardous substances).

Depending on branch of industry and production process, also other waste codes may be applicable.

13.1.2 Disposal methods

Incinerate under surveillance with energy recovery. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment.

13.1.3 Packaging/Container

European Union

Waste material code packaging (Directive 2008/98/EC).

15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1. UN number

| | |
|-----------|------|
| UN number | 1263 |
|-----------|------|

14.2. UN proper shipping name

| | |
|----------------------|------------------------|
| Proper shipping name | Paint related material |
|----------------------|------------------------|

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14.3. Transport hazard class(es)

| | |
|------------------------------|----|
| Hazard identification number | 30 |
| Class | 3 |
| Classification code | F1 |

14.4. Packing group

| | |
|---------------|-----|
| Packing group | III |
| Labels | 3 |

14.5. Environmental hazards

| | |
|--|----|
| Environmentally hazardous substance mark | no |
|--|----|

14.6. Special precautions for user

| | |
|--------------------|---|
| Special provisions | 163 |
| Special provisions | 367 |
| Special provisions | 650 |
| Limited quantities | Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass) |

Rail (RID)

14.1. UN number

| | |
|-----------|------|
| UN number | 1263 |
|-----------|------|

14.2. UN proper shipping name

| | |
|----------------------|------------------------|
| Proper shipping name | Paint related material |
|----------------------|------------------------|

14.3. Transport hazard class(es)

| | |
|------------------------------|----|
| Hazard identification number | 30 |
| Class | 3 |
| Classification code | F1 |

14.4. Packing group

| | |
|---------------|-----|
| Packing group | III |
| Labels | 3 |

14.5. Environmental hazards

| | |
|--|----|
| Environmentally hazardous substance mark | no |
|--|----|

14.6. Special precautions for user

| | |
|--------------------|---|
| Special provisions | 163 |
| Special provisions | 367 |
| Special provisions | 650 |
| Limited quantities | Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass) |

Inland waterways (ADN)

14.1. UN number

| | |
|-----------|------|
| UN number | 1263 |
|-----------|------|

14.2. UN proper shipping name

| | |
|----------------------|------------------------|
| Proper shipping name | Paint related material |
|----------------------|------------------------|

14.3. Transport hazard class(es)

| | |
|---------------------|----|
| Class | 3 |
| Classification code | F1 |

14.4. Packing group

| | |
|---------------|-----|
| Packing group | III |
| Labels | 3 |

14.5. Environmental hazards

| | |
|--|----|
| Environmentally hazardous substance mark | no |
|--|----|

14.6. Special precautions for user

| | |
|--------------------|---|
| Special provisions | 163 |
| Special provisions | 367 |
| Special provisions | 650 |
| Limited quantities | Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass) |

Sea (IMDG/IMSBC)

14.1. UN number

| | |
|-----------|------|
| UN number | 1263 |
|-----------|------|

14.2. UN proper shipping name

| | |
|----------------------|------------------------|
| Proper shipping name | paint related material |
|----------------------|------------------------|

14.3. Transport hazard class(es)

EPPA 220

| | |
|--|---|
| Class | 3 |
| 14.4. Packing group | |
| Packing group | III |
| Labels | 3 |
| 14.5. Environmental hazards | |
| Marine pollutant | - |
| Environmentally hazardous substance mark | no |
| 14.6. Special precautions for user | |
| Special provisions | 163 |
| Special provisions | 223 |
| Special provisions | 367 |
| Special provisions | 955 |
| Limited quantities | Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass) |
| 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code | |
| Annex II of MARPOL 73/78 | Not applicable, based on available data |

Air (ICAO-TI/IATA-DGR)

| | |
|--|------------------------|
| 14.1. UN number | |
| UN number | 1263 |
| 14.2. UN proper shipping name | |
| Proper shipping name | Paint related material |
| 14.3. Transport hazard class(es) | |
| Class | 3 |
| 14.4. Packing group | |
| Packing group | III |
| Labels | 3 |
| 14.5. Environmental hazards | |
| Environmentally hazardous substance mark | no |
| 14.6. Special precautions for user | |
| Special provisions | A3 |
| Special provisions | A72 |
| Special provisions | A192 |
| Limited quantities: maximum net quantity per packaging | 10 L |

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

| VOC content | Remark |
|-------------|--------|
| 60.40 % | |

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

| | Designation of the substance, of the group of substances or of the mixture | Conditions of restriction |
|---|--|---|
| <ul style="list-style-type: none"> n-butyl acetate 4-hydroxy-4-methylpentan-2-one hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, aromatics 2-25% aromatics ethyl (S)-2-hydroxypropionate | <p>Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008:</p> <p>(a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F;</p> <p>(b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10;</p> <p>(c) hazard class 4.1;</p> <p>(d) hazard class 5.1.</p> | <p>1. Shall not be used in:</p> <ul style="list-style-type: none"> — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects. <p>2. Articles not complying with paragraph 1 shall not be placed on the market.</p> <p>3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:</p> <ul style="list-style-type: none"> — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with R65 or H304,4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). <p>5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:</p> <p>a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life- threatening lung damage";</p> |

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| | | |
|--|--|--|
| | | <p>b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: "Just a sip of grill lighter may lead to life threatening lung damage";</p> <p>c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.'</p> |
| <ul style="list-style-type: none"> n-butyl acetate 4-hydroxy-4-methylpentan-2-one hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, aromatics 2-25% aromatics ethyl (S)-2-hydroxypropionate | <p>Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.</p> | <p>1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:</p> <ul style="list-style-type: none"> — metallic glitter intended mainly for decoration, — artificial snow and frost, — "whoopie" cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs. <p>2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:</p> <p>"For professional users only".</p> <p>3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC.4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.</p> |

National legislation Belgium

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No data available

National legislation The Netherlands

EPPA 220

| | |
|----------------------|-------|
| Waterbezwaarlijkheid | A (3) |
|----------------------|-------|

National legislation France

EPPA 220

No data available

National legislation Germany

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| | |
|-----|---|
| WGK | 2; Classification water polluting based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4) |
|-----|---|

n-butyl acetate

| | |
|---------------------------------------|--|
| TA-Luft | 5.2.5; I |
| TRGS900 - Risiko der Fruchtschädigung | n-Butylacetat; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden |

4-hydroxy-4-methylpentan-2-one

| | |
|-----------------------|--|
| TA-Luft | 5.2.5 |
| Hautresorptive Stoffe | 4-Hydroxy-4-methyl-pentan-2-on; H; Hautresorptiv |

carbon black

| | |
|---------|-------|
| TA-Luft | 5.2.1 |
|---------|-------|

ethyl (S)-2-hydroxypropionate

| | |
|---------|-------|
| TA-Luft | 5.2.5 |
|---------|-------|

National legislation United Kingdom

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No data available

Other relevant data

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No data available

carbon black

| | |
|-----------------------|------------------|
| TLV - Carcinogen | Carbon black; A3 |
| IARC - classification | 2B; Carbon black |

15.2. Chemical safety assessment

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No chemical safety assessment has been conducted for the mixture.

SECTION 16: Other information

Full text of any H-statements referred to under headings 2 and 3:

H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H372 Causes damage to organs (central nervous system) through prolonged or repeated exposure if inhaled.
H373 May cause damage to organs (central nervous system) through prolonged or repeated exposure if inhaled.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

| | |
|--------------|--|
| (*) | INTERNAL CLASSIFICATION BY BIG |
| CLP (EU-GHS) | Classification, labelling and packaging (Globally Harmonised System in Europe) |
| DMEL | Derived Minimal Effect Level |
| DNEL | Derived No Effect Level |
| EC50 | Effect Concentration 50 % |
| Erc50 | EC50 in terms of reduction of growth rate |
| LC50 | Lethal Concentration 50 % |
| LD50 | Lethal Dose 50 % |
| NOAEL | No Observed Adverse Effect Level |
| NOEC | No Observed Effect Concentration |
| OECD | Organisation for Economic Co-operation and Development |
| PBT | Persistent, Bioaccumulative & Toxic |
| PNEC | Predicted No Effect Concentration |
| STP | Sludge Treatment Process |
| vPvB | very Persistent & very Bioaccumulative |

Specific concentration limits CLP

| | | | |
|--------------------------------|----------|--------------------|----------------------|
| 4-hydroxy-4-methylpentan-2-one | C ≥ 10 % | Eye Irrit. 2; H319 | CLP Annex VI (ATP 0) |
|--------------------------------|----------|--------------------|----------------------|

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