SAFETY DATA SHEET

Based upon Regulation (EC) No. 1907/2006, as amended by Regulation (EC) No. 453/2010

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:

2.1.1 Classification according to Regulation EC No 1272/2008

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.
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.

2.1.2 Classification according to Directive 67/548/EEC-1999/45/EC

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC
R10 - Flammable.
Xi; R36 - Irritating to eyes.
R66 - Repeated exposure may cause skin dryness or cracking.
R67 - Vapours may cause drowsiness and dizziness.
R52-53 - Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

2.2 Label elements:

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

Drawn up according to the criteria of Regulation (EU) No 487/2013, 4th adaptation of Regulation (EC) No 1272/2008

Contains ethyl (S)-2-hydroxypropionate; n-butyl acetate; hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%).
Signal word Danger

H-statements

H226	Flammable liquid and vapour.
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.
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/shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.

Supplemental information

EUH066	Repeated exposure may cause skin dryness or cracking.

2.3 Other hazards:

CLP

May be ignited by sparks

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 DSD/DPD	Classification according to CLP	Note	Remark
carbon black (01-2119384822-32)	1333-86-4 215-609-9	2.51% <C<10%			(2)	Constituent
n-butyl acetate (01-2119485493-29)	123-86-4 204-658-1	25.01% <C< 50%	R10 R66 R67	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%	Xi; R36	Eye Irrit. 2; H319	(1)(2)(10)	Constituent
ethyl (S)-2-hydroxypropionate (-)	687-47-8 211-694-1	2.51% <C<10%	Xi; R37 - 41 R10	Flam. Liq. 3; H226 STOT SE 3; H335 Eye Dam. 1; H318	(1)(2)(10)	Constituent
hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%) (01-2119484309-19)		2.51% <C<10%	Xn; R65 R10 R66 R67 N; R51-53	Flam. Liq. 3; H226 Asp. Tox. 1; H304 STOT SE 3; H336 Aquatic Chronic 2; H411	(1)(10)	Constituent

(1) For R-phrases and 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. 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. 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.

After ingestion:

Irritation of the gastric/intestinal mucosa. AFTER ABSORPTION 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:

Water spray. Alcohol-resistant foam. Carbon dioxide. BC powder.

5.1.2 Unsuitable extinguishing media:

Solid water jet ineffective as extinguishing medium.

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 environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

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 leaking substance. 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 - 30 °C. Store at ambient temperature. Keep out of direct sunlight. Ventilation at floor level. 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:

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.

The Netherlands

n-Butylacetaat	Time-weighted average exposure limit 8 h	99 ppm 480 mg/m³	Private occupational exposure limit value
4-Hydroxy-4-methyl-2-pentanon	Time-weighted average exposure limit 8 h	25 ppm 120 mg/m³	Private occupational exposure limit value
Carbon black	Time-weighted average exposure limit 8 h	3.5 mg/m³	Private occupational exposure limit value
Ethyllactaat	Time-weighted average exposure limit 8 h	4.1 ppm 20 mg/m³	Private occupational exposure limit value

Belgium

Acétate de n-butyle	Short time value	200 ppm 964 mg/m³	
	Time-weighted average exposure limit 8 h	150 ppm 723 mg/m³	
4-Hydroxy-4-méthyl-2-pentanone	Time-weighted average exposure limit 8 h	50 ppm 241 mg/m³	
Carbone (noir de)	Time-weighted average exposure limit 8 h	3.5 mg/m³	

USA (TLV-ACGIH)

n-Butyl acetate	Short time value	200 ppm	TLV - Adopted Value
	Time-weighted average exposure limit 8 h	150 ppm	TLV - Adopted Value
Carbon black	Time-weighted average exposure limit 8 h	3 mg/m³ (I)	TLV - Adopted Value; (I): Inhalable fraction
Diacetone alcohol	Time-weighted average exposure limit 8 h	50 ppm	TLV - Adopted Value

Germany

4-Hydroxy-4-methyl-pentan-2-on	Time-weighted average exposure limit 8 h	20 ppm 96 mg/m³	TRGS 900
n-Butylacetat	Time-weighted average exposure limit 8 h	62 ppm 300 mg/m³	TRGS 900

France

Acétate de n-butyle	Short time value	200 ppm 940 mg/m³	VL: Valeur non réglementaire indicative
	Time-weighted average exposure limit 8 h	150 ppm 710 mg/m³	VL: Valeur non réglementaire indicative
Diacétone-alcool	Time-weighted average exposure limit 8 h	50 ppm 240 mg/m³	VL: Valeur non réglementaire indicative
Noir de carbone	Time-weighted average exposure limit 8 h	3.5 mg/m³	VL: Valeur non réglementaire indicative

UK

Butyl acetate	Short time value	200 ppm 966 mg/m³	Workplace exposure limit (EH40/2005)
	Time-weighted average exposure limit 8 h	150 ppm 724 mg/m³	Workplace exposure limit (EH40/2005)

Carbon black	Short time value	7 mg/m³	Workplace exposure limit (EH40/2005)
	Time-weighted average exposure limit 8 h	3.5 mg/m³	Workplace exposure limit (EH40/2005)
4-Hydroxy-4-methylpentan-2-one	Short time value	75 ppm 362 mg/m³	Workplace exposure limit (EH40/2005)
	Time-weighted average exposure limit 8 h	50 ppm 241 mg/m³	Workplace exposure limit (EH40/2005)

b) National biological limit values

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

8.1.2 Sampling methods

If applicable and available it will be listed below.

carbon black

Product name	Test	Number
Carbon Black	OSHA	ID 196
Carbon Black	NIOSH	5000

n-butyl acetate

Product name	Test	Number
Butyl acetate (Volatile Organic compounds)	NIOSH	2549
n-Butyl Acetate	OSHA	1009
n-Butyl Acetate (Esters I)	NIOSH	1450

4-hydroxy-4-methylpentan-2-one

Product name	Test	Number
Diacetone Alcohol	OSHA	7
diacetone alcohol (Alcohols Combined)	NIOSH	1405
Diacetone Alcohol (Alcohols III)	NIOSH	1402

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Product name	Test	Number
Petroleum Distillates fractions	OSHA	48

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 - Workers

n-butyl acetate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Acute systemic effects inhalation	960 mg/m³	
	Acute local effects inhalation	960 mg/m³	
	Long-term systemic effects inhalation	480 mg/m³	
	Long-term local effects inhalation	480 mg/m³	

4-hydroxy-4-methylpentan-2-one

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Acute local effects inhalation	240 mg/m³	
	Long-term systemic effects dermal	9.4 mg/kg bw/day	
	Long-term systemic effects inhalation	66.4 mg/m³	
	Long-term local effects inhalation	66.4 mg/m³	

ethyl (S)-2-hydroxypropionate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Acute systemic effects inhalation	90 mg/m³	
	Long-term systemic effects inhalation	1.6 mg/m³	
	Long-term local effects inhalation	3.2 mg/m³	

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	330 mg/m³	
	Acute systemic effects inhalation	570 mg/m³	
	Long-term systemic effects dermal	44 mg/kg bw/day	

DNEL - General population

n-butyl acetate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Acute systemic effects inhalation	859.7 mg/m³	
	Acute local effects inhalation	859.7 mg/m³	
	Long-term systemic effects inhalation	102.34 mg/m³	
	Long-term local effects inhalation	102.34 mg/m³	

4-hydroxy-4-methylpentan-2-one

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Acute local effects inhalation	120 mg/m³	
	Long-term systemic effects dermal	3.4 mg/kg bw/day	
	Long-term systemic effects inhalation	11.8 mg/m³	
	Long-term systemic effects oral	3.4 mg/kg bw/day	
	Long-term local effects inhalation	11.8 mg/m³	

ethyl (S)-2-hydroxypropionate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	6 mg/m³	
	Acute systemic effects inhalation	54 mg/m³	
	Long-term local effects inhalation	2 mg/m³	

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	71 mg/m³	
	Acute systemic effects inhalation	570 mg/m³	
	Long-term systemic effects dermal	26 mg/kg bw/day	
	Long-term systemic effects oral	26 mg/kg bw/day	

PNEC

carbon black

Compartments	Value	Remark
Fresh water	5 mg/l	
Marine water	5 mg/l	

n-butyl acetate

Compartments	Value	Remark
Fresh water	0.18 mg/l	
Marine water	0.018 mg/l	
Aqua (intermittent releases)	0.36 mg/l	
STP	35.6 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	

4-hydroxy-4-methylpentan-2-one

Compartments	Value	Remark
Fresh water	2 mg/l	
Marine water	0.2 mg/l	
Aqua (intermittent releases)	1 mg/l	
STP	82 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	

ethyl (S)-2-hydroxypropionate

Compartments	Value	Remark
STP	0.4 mg/l	

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:

Head/neck 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)
Explosion limits	0.6 - 11 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	124 °C
Flash point	≥23% °C
Evaporation rate	No data available
Vapour pressure	No data available
Relative vapour density	> 2
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

Physical hazards

Flammable liquid

9.2 Other information:

Absolute density	1100 kg/m³

SECTION 10: Stability and reactivity

10.1 Reactivity:

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

EPPA 220

No (test)data on the mixture available

carbon black

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50	OECD 401	> 8000 mg/kg		Rat	Male/female	Experimental value
Dermal	LD50		> 3000 mg/kg		Rabbit		

n-butyl acetate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50	Equivalent to OECD 423	12789 mg/kg		Rat	Male	Experimental value
Oral	LD50	Equivalent to OECD 423	10760 mg/kg bw		Rat	Female	Experimental value
Dermal	LD50	Equivalent to OECD 402	>14112 mg/kg bw	24 h	Rabbit	Male/female	Experimental value
Inhalation (vapours)	LC50	OECD 403	>21 mg/l air	4 h	Rat	Male/female	Weight of evidence

4-hydroxy-4-methylpentan-2-one

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
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
Dermal	LD50	Equivalent to OECD 404	13750 mg/kg bw		Rabbit		Experimental value
Inhalation	LC0	Equivalent to OECD 403	>=7.6 mg/l air	4 h	Rat	Male/female	Experimental value

ethyl (S)-2-hydroxypropionate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
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

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50	Equivalent to OECD 401	>5000 mg/kg bw		Rat	Male/female	Experimental value
Dermal	LD50	Other	>3400 mg/kg bw	24 h	Rat	Male/female	Experimental value
Inhalation (vapours)	LC50	Equivalent to OECD 403	>13.1 mg/l air	4 h	Rat	Male/female	Experimental value

Judgement is based on the relevant ingredients

Conclusion

Not classified for acute toxicity

Corrosion/irritation

EPPA 220

No (test)data on the mixture available

n-butyl acetate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Not irritating	OECD 405		24; 48; 72 hours	Rabbit	Experimental value
Skin	Not irritating	Equivalent to OECD 404	4 h	24; 48; 72 hours	Rabbit	Experimental value
Inhalation (vapours)	Slightly irritating	Human observation	3-5 minutes		Human	Experimental value

4-hydroxy-4-methylpentan-2-one

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Irritating	OECD 405		24; 48; 72 hours	Rabbit	Experimental value
Skin	Slightly irritating	Equivalent to OECD 404		24; 72 hours	Rabbit	Experimental value
Inhalation	Irritating	Human observation	8 h		Human	Weight of evidence

ethyl (S)-2-hydroxypropionate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Highly irritating	Other	10 seconds	4 hours	Isolated chicken eye	Experimental value
Skin	Not irritating	OECD 404	4 h		Rabbit	Experimental value
Inhalation (vapours)	Irritating	OECD 412	4 weeks (6h/day, 5 days/week)		Rat	Experimental value

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Not irritating	OECD 405		24; 48; 72 hours	Rabbit	Experimental value
Skin	Not irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Experimental value
Inhalation	Not irritating	Human observation	4 h		Human	Read-across

Classification is based on the relevant ingredients

Conclusion

Causes serious eye damage.

Not classified as irritating to the skin

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

EPPA 220

No (test)data on the mixture available

n-butyl acetate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Gender	Value determination
Skin	Not sensitizing		24 h	24 hours	Human		Experimental value

4-hydroxy-4-methylpentan-2-one

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Gender	Value determination
Skin	Not sensitizing	OECD 406		24; 48 hours	Guinea pig	Male/female	Experimental value

ethyl (S)-2-hydroxypropionate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Gender	Value determination
Skin	Not sensitizing	OECD 429			Mouse	Female	Experimental value

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Gender	Value determination
Skin	Not sensitizing	OECD 406		24; 48 hours	Guinea pig	Male/female	Experimental value

Judgement is based on the relevant ingredients

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

n-butyl acetate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Gender	Value determination
Inhalation (vapours)	NOAEC	EPA OTS 798.2450	500 ppm			13 weeks (6h/day, 5 days/week)	Rat	Male/female	Experimental value
Inhalation (vapours)				Central nervous system	Drowsiness, dizziness				Literature study

4-hydroxy-4-methylpentan-2-one

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Gender	Value determination
Oral	NOAEL	OECD 422	30 mg/kg bw/day		No effect	44 day(s)	Rat	Male	Experimental value
Oral	NOAEL	OECD 422	100 mg/kg bw/day		No effect	41-44 day(s)	Rat	Female	Experimental value
Dermal									Data waiving
Inhalation	NOAEC	Equivalent to OECD 412	1041 mg/m³ air		No effect	6 weeks (daily, 5 days/week)	Rat	Male/female	Experimental value

ethyl (S)-2-hydroxypropionate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Gender	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

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Gender	Value determination
Oral (stomach tube)	LOAEL	Equivalent to OECD 408	0.14 mg/kg/d	Kidney	Affection of the renal tissue	90 day(s)	Rat	Male	Experimental value
Oral (stomach tube)	NOAEL	Equivalent to OECD 408	1.28 mg/kg bw/day		No effect	90 day(s)	Rat	Female	Experimental value
Dermal	NOAEL systemic effects	Equivalent to OECD 411	>=495 mg/kg bw/day		No adverse systemic effects	13 weeks (5 days/week)	Rat	Male/female	Read-across
Inhalation (vapours)	LOAEC	Equivalent to OECD 413	1975 mg/m³ air	Kidney	Affection of the renal tissue	13 weeks (6h/day, 5 days/week)	Rat	Male	Experimental value
Inhalation (vapours)	LOAEC	Equivalent to OECD 413	7400 mg/m³		Loss of weight	13 weeks (6h/day, 5 days/week)	Rat	Female	Experimental value
Inhalation (vapours)	NOAEC	Equivalent to OECD 413	3950 mg/m³		No effect	13 weeks (6h/day, 5 days/week)	Rat	Female	Experimental value
Inhalation	NOAEC	Other	600 mg/m³ air	Central nervous system	No effect	3 days (8h/day)	Rat	Male	Read-across
Inhalation	NOAEC	Other	570 mg/m³ air	Central nervous system	No effect	3 days (8h/day)	Rat	Male	Read-across

Conclusion

May cause drowsiness or dizziness.

Not classified for subchronic toxicity

Mutagenicity (in vitro)

EPPA 220

No (test)data on the mixture available

n-butyl acetate

Result	Method	Test substrate	Effect	Value determination
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)		Experimental value
Negative without metabolic activation	Equivalent to OECD 473	Chinese hamster lung fibroblasts		Experimental value

4-hydroxy-4-methylpentan-2-one

Result	Method	Test substrate	Effect	Value determination
Negative	Equivalent to OECD 471	Bacteria (S.typhimurium)		Experimental value
Negative	Equivalent to OECD 472	Escherichia coli		Experimental value
Negative	OECD 473	CHL/IU cells		Experimental value
Negative	OECD 476	Mouse (lymphoma L5178Y cells)		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

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Result	Method	Test substrate	Effect	Value determination
Negative	Equivalent to OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value
Negative	Equivalent to OECD 473	Human lymphocytes	No effect	Experimental value
Negative	Equivalent to OECD 479	Chinese hamster ovary (CHO)	No effect	Read-across

Mutagenicity (in vivo)

EPPA 220

No (test)data on the mixture available

n-butyl acetate

Result	Method	Exposure time	Test substrate	Gender	Organ	Value determination
Negative	OECD 474	24 h	Mouse	Male/female		Read-across

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Result	Method	Exposure time	Test substrate	Gender	Organ	Value determination
Negative	Equivalent to OECD 474		Mouse	Male/female	Bone marrow	Read-across
Negative	Equivalent to OECD 475		Mouse	Male/female	Bone marrow	Read-across

Carcinogenicity

EPPA 220

No (test)data on the mixture available

n-butyl acetate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination	Organ	Effect
Inhalation							Data waiving		
Dermal							Data waiving		
Oral							Data waiving		

4-hydroxy-4-methylpentan-2-one

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination	Organ	Effect
Inhalation	NOAEC	OECD 451	450 ppm	102 weeks (daily, 5 days/week)	Rat	Male/female	Read-across	Kidney	Neoplastic effects

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination	Organ	Effect
Inhalation (vapours)	NOAEC	Equivalent to OECD 453	138 mg/m³ air	105 weeks (6h/day, 5	Rat	Male	Read-across	Kidney	No effect
Inhalation (vapours)	NOAEC	Equivalent to OECD 453	>=2200 mg/m³ air	105 weeks (6h/day, 5	Rat	Female	Read-across		No effect

Reproductive toxicity

EPPA 220

No (test)data on the mixture available

n-butyl acetate

	Parameter	Method	Value	Exposure time	Species	Gender	Effect	Organ	Value determination
Developmental toxicity	NOAEC	OECD 416	750 ppm	70 day(s)	Rat	Male/female			Experimental value
Effects on fertility	NOAEC	OECD 416	2000 ppm	70 day(s)	Rat	Male/female			Experimental value

4-hydroxy-4-methylpentan-2-one

	Parameter	Method	Value	Exposure time	Species	Gender	Effect	Organ	Value determination
Developmental toxicity	NOAEC	OECD 414	4106 mg/m³	6-15 days (gestation, daily)	Rat	Male/female	No effect		Read-across
Effects on fertility	NOAEL (P)	OECD 422	300 mg/kg bw/day	41-45 day(s)	Rat	Male/female	No effect		Experimental value

ethyl (S)-2-hydroxypropionate

	Parameter	Method	Value	Exposure time	Species	Gender	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	1551-3619 mg/kg bw/day	10 days (6h/day)	Rat		No effect		Experimental value

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

	Parameter	Method	Value	Exposure time	Species	Gender	Effect	Organ	Value determination
Developmental toxicity	NOAEC	Equivalent to OECD 414	>=5220 mg/m³ air	10 day(s)	Rat		No effect	Foetus	Experimental value
Maternal toxicity	NOAEL	Equivalent to OECD 414	>5220 mg/m³	10 day(s)	Rat	Female	No effect		Experimental value
Effects on fertility	NOAEL (P)	Equivalent to OECD 416	>=300 mg/kg bw/day		Rat	Male/female	No effect		Experimental value
	NOAEL (P)	Equivalent to OECD 415	>=1500	90 day(s)	Rat	Female	No effect	Female reproductive organ	Read-across

Judgement is based on the relevant ingredients

Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

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	Gender	Value determination
			Skin	Skin dryness or cracking				Literature study

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

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			
Acute toxicity invertebrates	EC50	OECD 202	>5600 mg/l	24 h	Daphnia magna			
Toxicity aquatic micro-organisms			100 mg/l	3 h				

n-butyl acetate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	18 mg/l	96 h	Pimephales promelas	Flow-through system	Fresh water	Experimental value; Lethal
Acute toxicity invertebrates	EC50		44 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Nominal concentration
Toxicity algae and other aquatic plants	EC50		674.7 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value; Growth rate
Long-term toxicity aquatic invertebrates	NOEC	OECD 211	23 mg/l	21 day(s)	Daphnia magna		Fresh water	Read-across; Reproduction
Toxicity aquatic micro-organisms	IC50		356 mg/l	40 h	Tetrahymena pyriformis	Static system	Fresh water	Experimental value; Nominal concentration

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 invertebrates	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	Selenastrum capricornutum	Static system	Fresh water	Experimental value; GLP
Long-term toxicity aquatic invertebrates	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

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
Acute toxicity invertebrates	EC50	OECD 202	683 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	EC50	OECD 201	3500 mg/l	72 h	Selenastrum capricornutum	Semi-static system	Fresh water	Experimental value; Growth rate
	EC50	OECD 201	2200 mg/l	72 h	Selenastrum capricornutum	Semi-static system	Fresh water	Experimental value; Biomass

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LL50	OECD 203	10-30 mg/l	96 h	Oncorhynchus mykiss	Semi-static system		Experimental value; GLP
	NOELR	OECD 203	0.3 mg/l	96 h	Oncorhynchus mykiss	Semi-static system		Experimental value; Lethal
Acute toxicity invertebrates	EL50	OECD 202	10-22 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; GLP
	NOEL	OECD 202	10 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	EL50	OECD 201	4.1 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate
	EL50	OECD 201	2.3 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Biomass
	EC50	OECD 201	0.94 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate
	EC50	OECD 201	0.53 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Biomass
Long-term toxicity fish	NOELR		0.161 mg/l	28 day(s)	Oncorhynchus mykiss		Fresh water	QSAR; Growth rate
Long-term toxicity aquatic invertebrates	NOELR	OECD 211	0.28 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Read-across; Reproduction
	NOEC	OECD 211	0.097 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Read-across; Reproduction
Toxicity aquatic micro-organisms	EL50		34.69 mg/l	48 h	Tetrahymena pyriformis		Fresh water	QSAR; Growth
	NOELR		1.123 mg/l	48 h	Tetrahymena pyriformis		Fresh water	QSAR; Growth

Classification is based on the relevant ingredients

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)	0.5E6 /cm³	Experimental value

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
Other	2 year(s)	Primary degradation	Calculated value

4-hydroxy-4-methylpentan-2-one

Biodegradation water

Method	Value	Duration	Value determination
OECD 301C: Modified MITI Test (I)	88 - 92 %	14 day(s)	Experimental value
Equivalent or similar to OECD 301A	98.51 %	28 day(s)	Experimental value

ethyl (S)-2-hydroxypropionate

Biodegradation water

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

Phototransformation air (DT50 air)

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

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Biodegradation water

Method	Value	Duration	Value determination
OECD 301F: Manometric Respirometry Test	75.9 %	31 day(s)	Read-across

Conclusion

Contains readily biodegradable component(s)

12.3 Bioaccumulative potential:

EPPA 220

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

carbon black

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

n-butyl acetate

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		14		Pisces	Literature study

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 117		2.3	25 °C	Experimental value

4-hydroxy-4-methylpentan-2-one

Log Kow

Method	Remark	Value	Temperature	Value determination
Equivalent to OECD 117		1.9		Conclusion by analogy

ethyl (S)-2-hydroxypropionate

Log Kow

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

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

Conclusion

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

12.4 Mobility in soil:

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.m³/mol		25 °C		Experimental value

ethyl (S)-2-hydroxypropionate

Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
0.26 Pa.m³/mol		20 °C		QSAR

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

hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level III	96 %		1.3 %	0.077 %	1.4 %	Calculated value

Conclusion

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

12.5 Results of PBT and vPvB assessment:

Due to insufficient data no statement can be made whether the component(s) fulfil(s) the criteria of PBT and vPvB according to Annex XIII of Regulation (EC) No 1907/2006.

12.6 Other adverse effects:

EPPA 220

Global warming potential (GWP)

None of the known components is included in the list of substances which may contribute to the greenhouse effect (Regulation (EC) No 842/2006)

Ozone-depleting potential (ODP)

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

Ground water

Ground water pollutant

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

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 dangerous substances).
Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Directive 2008/98/EC.

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

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

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	640E
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	640E
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	640E
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):

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	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 73/78 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
Passenger and cargo transport: 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	remarks
> 38 %	

Global Warming Potential (GWP) and Global Temperature change Potential (GTP)

Maximum value	EC limit value	Category	Subcategory	Notation
664 g/l				

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
· n-butyl acetate · 4-hydroxy-4-methylpentan-2-one · ethyl (S)-2-hydroxypropionate · hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	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: (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; (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; (c) hazard class 4.1; (d) hazard class 5.1.	1. Shall not be used in: — 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,2. Articles not complying with paragraph 1 shall not be placed on the market.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: — 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).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: 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”; 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”; 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.’
· n-butyl acetate · ethyl (S)-2-hydroxypropionate · hydrocarbons, C8-C10, n-alkanes, isoalkanes, cyclics, aromatics (2-25%)	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.	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: — metallic glitter intended mainly for decoration, — artificial snow and frost, — “whoopee” cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs.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: "For professional users only".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.

National legislation The Netherlands

EPPA 220

Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 03
Waterbezwaarlijkheid	8

National legislation Germany

EPPA 220

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

carbon black

MAK - Krebserzeugend Kategorie	3B
TA-Luft	TA-Luft Klasse 5.2.1

n-butyl acetate

TA-Luft	TA-Luft Klasse 5.2.5
Schwangerschaft Gruppe	C
MAK 8-Stunden-Mittelwert ppm	1-Butylacetat; 100 ppm
MAK 8-Stunden-Mittelwert mg/m³	1-Butylacetat; 480 mg/m³

4-hydroxy-4-methylpentan-2-one

TA-Luft	TA-Luft Klasse 5.2.5
Schwangerschaft Gruppe	D
MAK 8-Stunden-Mittelwert ppm	4-Hydroxy-4-methylpentan-2-on; 20 ppm
MAK 8-Stunden-Mittelwert mg/m³	4-Hydroxy-4-methylpentan-2-on; 96 mg/m³

ethyl (S)-2-hydroxypropionate

TA-Luft	TA-Luft Klasse 5.2.5

National legislation France

EPPA 220

No data available

National legislation Belgium

EPPA 220

No data available

Other relevant data

EPPA 220

No data available

carbon black

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

15.2 Chemical safety assessment:

No chemical safety assessment is required.

SECTION 16: Other information

Labelling according to Directive 67/548/EEC-1999/45/EC (DSD/DPD)

Labels

Irritant

R-phrases

10 Flammable

36	Irritating to eyes
52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
66	Repeated exposure may cause skin dryness or cracking
67	Vapours may cause drowsiness and dizziness

S-phrases

23	Do not breathe vapour
24/25	Avoid contact with skin and eyes
33	Take precautionary measures against static discharges
61	Avoid release to the environment. Refer to special instructions/safety data sheets.

Full text of any R-phrases referred to under headings 2 and 3:

R10 Flammable
R36 Irritating to eyes
R37 Irritating to respiratory system
R41 Risk of serious damage to eyes
R51 Toxic to aquatic organisms
R52 Harmful to aquatic organisms
R53 May cause long-term adverse effects in the aquatic environment
R65 Harmful: may cause lung damage if swallowed
R66 Repeated exposure may cause skin dryness or cracking
R67 Vapours may cause drowsiness and dizziness

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.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

DSD	Dangerous Substance Directive
DPD	Dangerous Preparation Directive
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)

Specific concentration limits CLP

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

Specific concentration limits DSD

4-hydroxy-4-methylpentan-2-one	C ≥ 10 %	Xi; R36	Annex VI

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