Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)
according to Regulation (EU) 2020/878

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

1.1. **Product identifier**

Article No. (manufacturer/supplier):	4 06450 BN000
Trade name/designation	epple 06450 cast resin component B UFI: G440-F0W5-1005-KE2S

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

Relevant identified uses:
Casting resin for casting electronic and other components.

1.3. **Details of the supplier of the safety data sheet**

supplier (manufacturer/importer/downstream user/distributor)

E. Epple & Co. GmbH
Hertzstr. 8
71083 Herrenberg
Telephone: +49 7032 / 9771-17
Telefax: +49 7032 / 9771-60
www.epple-chemie.de

Department responsible for information:
laboratory
E-mail (competent person): labor@epple-chemie.de

1.4. **Emergency telephone number**
Information center against poisoning Bonn: +49 (0) 228 / 19 240 (Advice in German)

SECTION 2: Hazards identification

2.1. **Classification of the substance or mixture**

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

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

Acute Tox. 4 / H302	Acute toxicity (oral)	Harmful if swallowed.
Skin Corr. 1B / H314	Skin corrosion/irritation	Causes severe skin burns and eye damage.
Eye Dam. 1 / H318	Serious eye damage/eye irritation	Causes serious eye damage.
Skin Sens. 1 / H317	Respiratory or skin sensitisation	May cause an allergic skin reaction.
Muta. 2 / H341	Germ cell mutagenicity	Suspected of causing genetic defects.
Aquatic Chronic 2 / H411	Hazardous to the aquatic environment	Toxic to aquatic life with long lasting effects.

2.2. **Label elements**

The product is classified and labelled according to EC directives or corresponding national laws.

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

Hazard pictograms



Danger

Hazard statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P260	Do not breathe vapour.
P280	Wear protective gloves.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302 + P352	IF ON SKIN: Wash with plenty of water and soap.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/ container to an approved waste disposal plant.

Hazard components for labelling

Phenol
Formaldehyde, polymer with 1,3-benzenedimethaneamine and phenol

Amines, polyethylenepoly-, tetraethylenepentamine fraction
m-phenylenebis(methylamine)

Supplemental hazard information
not applicable

2.3. **Other hazards**

No information available.

SECTION 3: Composition/information on ingredients

3.2. **Mixtures**

Description modified aminic hardener

Hazardous ingredients

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

EC No. CAS No. Index No.	REACH No. Designation classification: // Remark	weight-%
500-137-0 57214-10-5	01-2119966906-20 Formaldehyde, polymer with 1,3-benzenedimethaneamine and phenol Skin Corr. 1C H314 / Skin Sens. 1B H317 / Aquatic Chronic 3 H412	24,9 - 49,9
292-587-7 90640-66-7	01-2119487290-37 Amines, polyethylenepoly-, tetraethylenepentamine fraction Acute Tox. 4 H302 / Acute Tox. 4 H312 / Skin Corr. 1B H314 / Eye Dam. 1 H318 / Skin Sens. 1 H317 / Aquatic Chronic 2 H411	24,9 - 49,9
202-859-9 100-51-6 603-057-00-5	01-2119492630-38 benzyl alcohol Acute Tox. 4 H332 / Acute Tox. 4 H302 Acute toxicity estimate (ATE): ATE (oral): 1230 mg/kg bw / ATE (inhalation, vapour): 4,17 mg/L	9,9 - 19,9
216-032-5 1477-55-0	01-2119480150-50 m-phenylenebis(methylamine) Acute Tox. 4 H302 / Acute Tox. 4 H332 / Skin Corr. 1B H314 / Skin Sens. 1B H317 / Aquatic Chronic 3 H412 Acute toxicity estimate (ATE): ATE (oral): 930 mg/kg bw	9,9 - 19,9
203-180-0 104-15-4 016-030-00-2	01-2119538811-39 Toluene-4-sulfonic acid Skin Irrit. 2 H315 / Eye Irrit. 2 H319 / STOT SE 3 H335	2,4 - 9,9
203-632-7 108-95-2 604-001-00-2	01-2119471329-32 Phenol Muta. 2 H341 / Acute Tox. 3 H331 / Acute Tox. 3 H311 / Acute Tox. 3 H301 / STOT RE 2 H373 / Skin Corr. 1B H314 Specific concentration limit (SCL): Skin Corr. 1B H314 >= 3 / Skin Irrit. 2 H315 >= 1 / Eye Irrit. 2 H319 >= 1 Acute toxicity estimate (ATE): ATE (oral): 340 mg/kg bw / ATE (inhalation, vapour): 0,31 mg/L	2,4 - 9,9

Additional information
Full text of classification: see section 16

SECTION 4: First aid measures

4.1. **Description of first aid measures**

General information

In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness give nothing by mouth, place in recovery position and seek medical advice.

In case of inhalation
Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest provide artificial respiration.

Following skin contact
Take off immediately all contaminated clothing. After contact with skin, wash immediately with plenty of water and soap. Do not use solvents or thinners.

After eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice immediately.

Following ingestion
If swallowed, rinse mouth with water (only if the person is conscious). Seek medical advice immediately. Keep victim calm. Do NOT induce vomiting.

4.2. **Most important symptoms and effects, both acute and delayed**
In all cases of doubt, or when symptoms persist, seek medical advice.

4.3. **Indication of any immediate medical attention and special treatment needed**
First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

5.1. **Extinguishing media**

Suitable extinguishing media
alcohol resistant foam, carbon dioxide, Powder, spray mist, (water)

Unsuitable extinguishing media
strong water jet

5.2. **Special hazards arising from the substance or mixture**
Dense black smoke occurs during fire. Inhaling hazardous decomposing products can cause serious health damage.

5.3. **Advice for firefighters**
Provide a conveniently located respiratory protective device. Do not allow water used to extinguish fire to enter drains, ground or waterways. Cool closed containers that are near the source of the fire.

SECTION 6: Accidental release measures

6.1. **Personal precautions, protective equipment and emergency procedures**
Keep away from sources of ignition. Ventilate affected area. Do not breathe vapours.

6.2. **Environmental precautions**
Do not allow to enter into surface water or drains. If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.

6.3. **Methods and material for containment and cleaning up**
Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13). Clean using cleansing agents. Do not use solvents.

6.4. **Reference to other sections**
Observe protective provisions (see section 7 and 8).

SECTION 7: Handling and storage

7.1. **Precautions for safe handling**

Advices on safe handling

Avoid contact with skin, eyes and clothes. When using do not eat, drink or smoke. Personal protection equipment: refer to section 8. Follow the legal protection and safety regulations.

Further information
Vapours are heavier than air. Vapours form explosive mixtures with air.

7.2. **Conditions for safe storage, including any incompatibilities**

Requirements for storage rooms and vessels
Storage in accordance with the Ordinance on Industrial Safety and Health (BetrSiVO). Keep container tightly closed. Do not empty containers with pressure - no pressure vessel! Smoking is forbidden. Access only for authorised persons. Store carefully closed containers upright to prevent any leaks. Soils have to conform to the "Guidelines for avoidance of ignition hazards due to electrostatic charges (TRGS 727)".

Hints on joint storage
Keep away from strongly acidic and alkaline materials as well as oxidizers.

Further information on storage conditions
Take care of instructions on label. Store in a well-ventilated and dry room at temperatures between 5 °C and 30 °C. Protect from heat and direct sunlight. Keep container tightly closed. Remove all sources of ignition. Smoking is forbidden. Access

only for authorised persons. Store carefully closed containers upright to prevent any leaks.

7.3. **Specific end use(s)**
Observe technical data sheet. Observe instructions for use.

SECTION 8: Exposure controls/personal protection

8.1. **Control parameters**
Occupational exposure limit values

Phenol
Index No. 604-001-00-2 / EC No. 203-632-7 / CAS No. 108-95-2
TWA: 7,8 mg/m3; 2 ppm
STEL: 16 mg/m3; 4 ppm

Additional information
TWA : Long-term occupational exposure limit value
STEL : short-term occupational exposure limit value
Ceiling : peak limitation

DNEL:

benzyl alcohol
Index No. 603-057-00-5 / EC No. 202-859-9 / CAS No. 100-51-6
DNEL acute dermal, short-term (systemic), Workers: 47 mg/kg bw/day
DNEL long-term dermal (systemic), Workers: 9,5 mg/kg
DNEL acute inhalative (systemic), Workers: 450 mg/m³
DNEL long-term inhalative (systemic), Workers: 90 mg/m³

Phenol
Index No. 604-001-00-2 / EC No. 203-632-7 / CAS No. 108-95-2
DNEL long-term inhalative (systemic), Workers: 8 mg/m³

m-phenylenebis(methylamine)
EC No. 216-032-5 / CAS No. 1477-55-0
DNEL long-term dermal (systemic), Workers: 0,33 mg/kg
DNEL long-term inhalative (local), Workers: 0,2 mg/m³
DNEL long-term inhalative (systemic), Workers: 1,2 mg/m³

Toluene-4-sulfonic acid
Index No. 016-030-00-2 / EC No. 203-180-0 / CAS No. 104-15-4
DNEL long-term dermal (systemic), Workers: 7,6 mg/kg bw/day
DNEL long-term inhalative (systemic), Workers: 53,6 mg/m³

Formaldehyde, polymer with 1,3-benzenedimethaneamine and phenol
EC No. 500-137-0 / CAS No. 57214-10-5
DNEL acute dermal, short-term (local), Workers: 2,8 mg/kg bw/day
DNEL acute dermal, short-term (systemic), Workers: 3,85 µg/cm²
DNEL long-term dermal (local), Workers: 0,28 mg/kg bw/day
DNEL long-term dermal (systemic), Workers: 0,385 µg/cm²
DNEL acute inhalative (local), Workers: 6 mg/m³
DNEL acute inhalative (systemic), Workers: 2 mg/m³
DNEL long-term inhalative (local), Workers: 0,6 mg/m³
DNEL long-term inhalative (systemic), Workers: 0,02 mg/m³

PNEC:

benzyl alcohol
Index No. 603-057-00-5 / EC No. 202-859-9 / CAS No. 100-51-6
PNEC aquatic, freshwater: 1 mg/L
PNEC aquatic, marine water: 0,1 mg/L
PNEC aquatic, intermittent release: 2,3 mg/L
PNEC sediment, freshwater: 5,27 mg/kg
PNEC sediment, marine water: 0,527 mg/kg
PNEC, soil: 0,456 mg/kg
PNEC sewage treatment plant (STP): 39 mg/L

Phenol
Index No. 604-001-00-2 / EC No. 203-632-7 / CAS No. 108-95-2
PNEC aquatic, freshwater: 7,7 µg/L

PNEC aquatic, marine water: 0,77 µg/L
PNEC sediment, freshwater: 91,5 µg/kg
PNEC sediment, marine water: 9,15 µg/kg
PNEC, soil: 136 µg/kg
PNEC sewage treatment plant (STP): 2,1 mg/L

m-phenylenebis(methylamine)
EC No. 216-032-5 / CAS No. 1477-55-0
PNEC aquatic, freshwater: 0,094 mg/L
PNEC aquatic, marine water: 0,009 mg/L
PNEC aquatic, intermittent release: 0,152 mg/L
PNEC sediment, freshwater: 0,43 mg/kg
PNEC sediment, marine water: 0,043 mg/kg
PNEC, soil: 0,045 mg/kg
PNEC sewage treatment plant (STP): 10 mg/L

Toluene-4-sulfonic acid
Index No. 016-030-00-2 / EC No. 203-180-0 / CAS No. 104-15-4
PNEC aquatic, freshwater: 0,73 mg/L
PNEC aquatic, marine water: 0,0073 mg/L
PNEC aquatic, intermittent release: 0,073 mg/L
PNEC sediment, freshwater: 0,0577 mg/kg
PNEC sediment, marine water: 0,0057 mg/kg
PNEC, soil: 0,016 mg/kg
PNEC sewage treatment plant (STP): 58 mg/L

Formaldehyde, polymer with 1,3-benzenedimethaneamine and phenol
EC No. 500-137-0 / CAS No. 57214-10-5
PNEC aquatic, freshwater: 20 µg/L
PNEC aquatic, marine water: 2 µg/L
PNEC sediment, freshwater: 0,1001 mg/kg dw
PNEC sediment, marine water: 0,01 mg/kg dw
PNEC, soil: 0,0236 mg/kg dw
PNEC sewage treatment plant (STP): 30 mg/L

8.2. **Exposure controls**

Provide good ventilation. This can be achieved with local or room suction. If this should not be sufficient to keep aerosol and solvent vapour concentration below the exposure limit values, a suitable respiratory protection must be used.

Personal protection equipment

Respiratory protection

If the workplace limit values (AGW) are exceeded, a suitable breathing apparatus must be worn. Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190). Use only respiratory protection equipment with CE-symbol including four digit test number.
Use filter / combination filter according to EN 14387.
Suitable respiratory protection apparatus: ABEK-P2

Hand protection

For prolonged or repeated handling the following glove material must be used: NBR (Nitrile rubber)
Thickness of the glove material > 0,4 mm ; Breakthrough time: > 480 min.
Observe the instructions and details for use, storage, maintenance and replacement provided by the protective glove manufacturer. Penetration time of glove material depending on intensity and duration of exposure to skin. Recommended glove articles EN ISO 374
Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

Eye/face protection

Wear eye glasses with side protection according to EN 166.

Body protection

Wear antistatic clothing of natural fibers (cotton) or heat resistant synthetic fibers.

Protective measures

After contact clean skin thoroughly with water and soap or use appropriate cleanser.

Environmental exposure controls

Do not allow to enter into surface water or drains. See section 7. No additional measures necessary.

SECTION 9: Physical and chemical properties

9.1. **Information on basic physical and chemical properties**

Physical state:	**Liquid**
Appearance:	**Liquid**
Colour:	**brown**
Odour:	**characteristic**
Odour threshold:	**not applicable**
Melting point/freezing point:	**-15 °C** Source: benzyl alcohol
Initial boiling point and boiling range:	**206 °C** Source: benzyl alcohol
Flammability:	**not applicable**
Lower and upper explosion limit:	
Lower explosion limit:	**1,22 Vol-%** Source: benzyl alcohol
Upper explosion limit:	**13 Vol-%** Source: benzyl alcohol
Flash point:	**not determined**
Auto-ignition temperature:	**435 °C** Source: benzyl alcohol
Decomposition temperature:	**not applicable**
pH at 20 °C:	**not relevant**
Kinematic viscosity (40°C):	**1851,85 mm²/s**
Viscosity at 20 °C:	**1 - 3 Pa*s**
Solubility(ies):	
Water solubility at 20 °C:	**partially miscible**
Partition coefficient: n-octanol/water:	**see section 12**
Vapour pressure at 20 °C:	**0,027 mbar** Source: benzyl alcohol
Density and/or relative density:	
Density at 20 °C:	**1,08 g/cm³**
Relative vapour density:	**not applicable**
particle characteristics:	**not applicable**

9.2. **Other information**

Solvent separation test: **< 3 weight-% (ADR/RID)**

SECTION 10: Stability and reactivity

10.1. **Reactivity**
No information available.

10.2. **Chemical stability**
Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7.

10.3. **Possibility of hazardous reactions**
Keep away from strong acids, strong bases and strong oxidizing agents to avoid exothermic reactions.

10.4. **Conditions to avoid**
Hazardous decomposition byproducts may form with exposure to high temperatures.

10.5. **Incompatible materials**
not applicable

10.6. **Hazardous decomposition products**
Hazardous decomposition byproducts may form with exposure to high temperatures, e.g.: carbon dioxide, carbon monoxide, smoke, nitrogen oxides.

SECTION 11: Toxicological information

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

Acute toxicity

Harmful if swallowed.

benzyl alcohol
oral, LD50, Rat: 1230 mg/kg
dermal, LD50, Rabbit: 2000 mg/kg
inhalative (Gases), LC50, Rat: > 4,178 ppmV (4 h)

Phenol
oral, LD50, Rat: 340 mg/kg
dermal, LD50, Rabbit 850 - 1400 mg/kg
inhalative (dust and mist), LC50, Rat: 0,316 mg/L (4 h)
inhalative (vapours), LC50, Rat: 0,9 mg/L (8 h)

m-phenylenebis(methylamine)
oral, LD50, Rat: 930 mg/kg
dermal, LD50, Rat: > 2000 mg/kg
dermal, LD50, Rabbit: 2000 mg/kg
inhalative (vapours), LC50, Rat: 2,4 mg/L (4 h)
inhalative (vapours), LC50, Rat: 3,89 mg/L (1 h)

Toluene-4-sulfonic acid
oral, LD50, Rat: > 1104 mg/kg
inhalative (vapours), LC50, Rat 50 - 100 mg/kg (8 h)

Formaldehyde, polymer with 1,3-benzenedimethaneamine and phenol
oral, LD50, Rat: > 2000 mg/kg
Method: OECD 425
dermal, LD50, Rat: > 2020 mg/kg
Method: OECD 402

Skin corrosion/irritation; Serious eye damage/eye irritation

Causes severe skin burns and eye damage.

benzyl alcohol
eyes, Rabbit: Evaluation Irritating to eyes.
Method: OECD 405
Skin, Rabbit: Evaluation no skin irritation
Method: OECD 404

m-phenylenebis(methylamine)
Skin, Rabbit (24 h): Evaluation strongly irritant.

Toluene-4-sulfonic acid
Skin, Rabbit: Evaluation corrosive
Method: OECD 404
eyes, Rabbit: Evaluation Irritating to eyes, reversible within 7 days

Respiratory or skin sensitisation

May cause an allergic skin reaction.

benzyl alcohol
Skin, Guinea pig: ; Evaluation not sensitising.
Method: OECD 406

m-phenylenebis(methylamine)
Skin, Mouse: ; Evaluation Sensitising
Method: OECD 429

Toluene-4-sulfonic acid
Skin, Guinea pig: ; Evaluation not sensitising.
Method: Directive 67/548/EEC, Annex V, B.6.

Formaldehyde, polymer with 1,3-benzenedimethaneamine and phenol
Skin, Mouse: ; Evaluation sensitising
Method: OECD 429

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Suspected of causing genetic defects.

m-phenylenebis(methylamine)
Germ cell mutagenicity; Evaluation No mutagenic effect
genotoxicity; Evaluation negative
Method: OECD 471 (Ames test)
Ames test; Salmonella typhimurium
genotoxicity; Evaluation negative
Method: OECD 473
in-vitro; Chromosomal aberrations in mammalian cells:; Hamster
genotoxicity; Evaluation negative
Method: OECD 476
in-vitro; Mouse-lymphoma-cells
genotoxicity; Evaluation negative
Method: OECD 474
in-vivo; Mouse; oral

Toluene-4-sulfonic acid
Carcinogenicity; Evaluation negative
Method: OECD 453
Rat; oral
Reproductive toxicity; Evaluation No mutagenic effect
rat, female; oral
genotoxicity; Evaluation negative
Method: OECD 471 (Ames test).
in-vitro
genotoxicity; Evaluation negative
Method: OECD 473
in-vitro
genotoxicity; Evaluation negative
Method: OECD 474
in-vivo; oral

Formaldehyde, polymer with 1,3-benzenedimethaneamine and phenol
Germ cell mutagenicity; Evaluation negative
Method: OECD 471 (Ames test)
Germ cell mutagenicity; Evaluation negative
Method: OECD 473
Germ cell mutagenicity; Evaluation positive
Method: OECD 476

STOT-single exposure; STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Practical experience/human evidence

Causes burns. The preparation may be a skin sensitiser. It may also be a skin irritant and repeated contact may increase this effect. Prolonged or repeated contact with skin or mucous membrane result in irritation symptoms such as redness, blistering, dermatitis, etc.

Overall assessment on CMR properties

The ingredients in this mixture do not meet the criteria for classification as CMR category 1A or 1B according to CLP.

Remark

There is no information available on the preparation itself .

11.2. **Information on other hazards**

Endocrine disrupting properties
No information available.

SECTION 12: Ecological information

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

Do not allow to enter into surface water or drains.

12.1. **Toxicity**

benzyl alcohol
Fish toxicity, LC50, Pimephales promelas (fathead minnow): 460 mg/L (96 h)
Method: EPA 600/3-76/097
Daphnia toxicity, EC50, Daphnia magna (Big water flea): 230 mg/L (48 h)
Method: OECD 202
Daphnia toxicity, LC50, Daphnia magna (Big water flea): 360 mg/L (48 h)
Algae toxicity, EC0, Scenedesmus quadricauda: 640 mg/L (96 h)
Algae toxicity, EC50, Pseudokirchneriella subcapitata: 770 mg/L (72 h)
Method: OECD 201
Bacteria toxicity, EC10, Pseudomonas putida: 658 mg/L (16 h)

Phenol
Fish toxicity, LC50, Danio rerio (zebrafish): 27,8 mg/L (96 h)
Daphnia toxicity, EC50, Daphnia pulex (water flea) 18 - 36 mg/L (48 h)
Algae toxicity, EC50, Pseudokirchneriella subcapitata: 46,42 mg/L (96 h)
Algae toxicity, EC50, Desmodesmus subspicatus 187 - 279 mg/L (72 h)
Fish toxicity, LC50, Salmo gairdneri 9,1 - 12,2 mg/L (96 h)
Daphnia toxicity, EC50, Daphnia magna (Big water flea): 6,6 mg/L (48 h)
Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout): 8,9 mg/L (96 h)

m-phenylenebis(methylamine)
Fish toxicity, LC50, Oryzias latipes (Ricefish): 87,6 mg/L (96 h)
Method: OECD 203
semistatic
Daphnia toxicity, EC50, Daphnia magna (Big water flea): 15,2 mg/L (48 h)
Method: OECD 202
semistatic
Algae toxicity, ErC50, Selenastrum capricornutum: 32,1 mg/L (72 h)
Method: OECD 201
static test
Bacteria toxicity, EC50, Activated sludge: > 1000 mg/L
Method: OECD 209
static test

Toluene-4-sulfonic acid
Fish toxicity, LC50, Leuciscus idus (golden orfe): 325 mg/L (96 h)
Method: OECD 203
static test
Daphnia toxicity, EC50: > 103 mg/L (48 h)
Method: OECD 202
static test
Algae toxicity, ErC50: 73 mg/L (72 h)
Method: OECD 201
static test
Bacteria toxicity, EC50, Activated sludge: > 650 mg/L (3 h)
Method: OECD 209
Algae toxicity, ErC50, Desmodesmus subspicatus: > 40 mg/L (72 h)
Method: Directive 67/548/EWG, appendice V, C.3
static test

Formaldehyde, polymer with 1,3-benzenedimethaneamine and phenol
Fish toxicity, LC50, Oncorhynchus mykiss (Rainbow trout): 25,9 mg/L (96 h)
Method: OECD 203
Daphnia toxicity, EC50: 29,8 mg/L (48 h)
Method: OECD 202
Algae toxicity, EC50, Pseudokirchneriella subcapitata: 20,4 mg/L (72 h)
Method: OECD 201
Bacteria toxicity, EC50, Activated sludge: 491,3 mg/L (3 h)
Method: OECD 209

Long-term Ecotoxicity

Toxic to aquatic life with long lasting effects.

m-phenylenebis(methylamine)
Daphnia toxicity, NOEC, Daphnia magna (Big water flea): 4,7 mg/L (21 d)
Method: OECD 211
Algae toxicity, NOEC, Pseudokirchneriella subcapitata: 10,5 mg/L (72 h)
Method: OECD 201
Daphnia toxicity, LOEC:, Daphnia magna (Big water flea): 15 mg/L (21 d)
Method: OECD 211
Daphnia toxicity, EC50:, Daphnia magna (Big water flea): 8,4 mg/L (21 d)
Method: OECD 211
Daphnia toxicity, LC50:, Daphnia magna (Big water flea): 6,77 mg/L (21 d)
Method: OECD 211
Bacterial toxicity:, EC50:, Activated sludge: > 1000 mg/L (30 min.)
Method: OECD 209

Toluene-4-sulfonic acid
Algae toxicity, NOEC: 44,8 mg/L (72 h)
Method: OECD 201
Bacteria toxicity, NOEC: 580 mg/L (3 h)
Method: OECD 209

12.2. **Persistence and degradability**

benzyl alcohol
Biodegradation: 92 - 96 % (28 d); Evaluation Readily biodegradable
Method: OECD 301C
Biodegradation: 95 - 97 % (21 d); Evaluation Readily biodegradable
Method: OECD 301A

m-phenylenebis(methylamine)
Biodegradation:, aerobic: 49 % (28 d); Evaluation Not readily biodegradable
Method: OECD 301B
Activated sludge

Toluene-4-sulfonic acid
Biodegradation:: > 60 % (28 d); Evaluation Readily biodegradable

Formaldehyde, polymer with 1,3-benzenedimethaneamine and phenol
Biodegradation: 19,3 % (28 d)
Method: OECD 301D

12.3. **Bioaccumulative potential**

benzyl alcohol
Partition coefficient: n-octanol/water: 1,05

Phenol
Partition coefficient: n-octanol/water: 1,47

m-phenylenebis(methylamine)
Partition coefficient: n-octanol/water: 0,18

Toluene-4-sulfonic acid
Partition coefficient: n-octanol/water: 0,41

Bioconcentration factor (BCF)

Phenol
Bioconcentration factor (BCF), Leuciscus idus (golden orfe): 20
Bioconcentration factor (BCF), Pimephales promelas (fathead minnow): 1276 x10^49
Bioconcentration factor (BCF), Daphnia magna (Big water flea): 277

m-phenylenebis(methylamine)
Bioconcentration factor (BCF), Cyprinus carpio (Common Carp): < 0,3

12.4. **Mobility in soil**
Toxicological data are not available.

12.5. **Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. **Endocrine disrupting properties**
No information available.

12.7. **Other adverse effects**

No information available.

SECTION 13: Disposal considerations

13.1. **Waste treatment methods**

Appropriate disposal / Product
Recommendation
Do not allow to enter into surface water or drains. This material and its container must be disposed of in a safe way. Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.Observe in addition any national regulations!

Switzerland: Disposal in accordance with the Ordinance on the Transport of Waste (VeVA) and the Ordinance on the Avoidance and Disposal of Waste (VVEA).

List of proposed waste codes/waste designations in accordance with EWC
080409* Waste adhesives and sealants containing organic solvents or other dangerous substances
*Hazardous waste according to Directive 2008/98/EC (waste framework directive).

Appropriate disposal / Package
Dispose of packaging and contaminated filters at a offical hazardous waste incinerator facility.
Recommendation:
Waste codes / waste designations according to EWC / AVV: 15 01 10*
Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1. **UN number or ID number**

UN 2735

14.2. **UN proper shipping name**

Land transport (ADR/RID):	Amines, liquid, corrosive, n.o.s. (m-phenylenbis(methylamine))
Sea transport (IMDG):	AMINES, LIQUID, CORROSIVE, N.O.S. (m-phenylenbis(methylamine), Amine, Polyethylenpoly-, Tetraethylenpentaminfrakion)
Air transport (ICAO-TI / IATA-DGR):	Amines, liquid, corrosive, n.o.s. (m-phenylenbis(methylamine))

14.3. **Transport hazard class(es)**

8

14.4. **Packing group**

II

14.5. **Environmental hazards**

Land transport (ADR/RID)	DANGEROUS FOR THE ENVIRONMENT
Marine pollutant	p / Amine, Polyethylenpoly-, Tetraethylenpentaminfrakion

14.6. **Special precautions for user**

Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage.
Advices on safe handling: see parts 6 - 8

Further information

Land transport (ADR/RID)

Tunnel restriction code	E

Sea transport (IMDG)

EmS-No.	F-A, S-B

14.7. **Maritime transport in bulk according to IMO instruments**

No transport as bulk according IBC - Code.

SECTION 15: Regulatory information

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

EU legislation

Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive]
VOC-value (in g/L): 162

National regulations

Restrictions of occupation
Observe employment restrictions under the Maternity Protection Directive 92/85/EEC or stricter national regulations, if applicable.

Switzerland: Maternity Protection Ordinance (SR 822.111.52): Pregnant women and nursing mothers may only come into contact with or be exposed to this preparation during their work if it has been established on the basis of a risk assessment by a specialist that, in the context of the activities and the protective measures taken, exposure will not result in harm to the mother or child.

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC) or stricter national regulations, if applicable.

Switzerland: Youth Labour Protection Ordinance (ArGV 5; SR 822.115): Young people up to the age of 18 may only come into contact with or be exposed to this preparation during their work if the Federal Office for Professional Education and Technology (OPET) or the State Secretariat for Economic Affairs (SECO) has authorised an exception.

For professional use only. Product is not intended for consumer use.

Substance/product listed in the following inventories:
AICS listed
DSL listed
EHS no information
IECSC listed
KECI no information
MITI no information
NZLoC no information
PICCS no information
TCSI no information
TSCA listet

15.2. **Chemical Safety Assessment**
For the following substances of this mixture a chemical safety assessment has been carried out:

EC No. CAS No.	Designation	REACH No.
500-137-0 57214-10-5	Formaldehyde, polymer with 1,3-benzenedimethaneamine and phenol	01-2119966906-20
292-587-7 90640-66-7	Amines, polyethylenepoly-, tetraethylenepentamine fraction	01-2119487290-37
202-859-9 100-51-6	benzyl alcohol	01-2119492630-38
216-032-5 1477-55-0	m-phenylenebis(methylamine)	01-2119480150-50
203-180-0 104-15-4	Toluene-4-sulfonic acid	01-2119538811-39
203-632-7 108-95-2	Phenol	01-2119471329-32

SECTION 16: Other information

Full text of classification in section 3:

Skin Corr. 1C / H314	Skin corrosion/irritation	Causes severe skin burns and eye damage.
Skin Sens. 1B / H317	Respiratory or skin sensitisation	May cause an allergic skin reaction.
Aquatic Chronic 3 / H412	Hazardous to the aquatic environment	Harmful to aquatic life with long lasting effects.
Acute Tox. 4 / H302	Acute toxicity (oral)	Harmful if swallowed.
Acute Tox. 4 / H312	Acute toxicity (dermal)	Harmful in contact with skin.
Skin Corr. 1B / H314	Skin corrosion/irritation	Causes severe skin burns and eye damage.
Eye Dam. 1 / H318	Serious eye damage/eye irritation	Causes serious eye damage.
Skin Sens. 1 / H317	Respiratory or skin sensitisation	May cause an allergic skin reaction.
Aquatic Chronic 2 / H411	Hazardous to the aquatic environment	Toxic to aquatic life with long lasting effects.

Acute Tox. 4 / H332	Acute toxicity (inhalative)	Harmful if inhaled.
Skin Irrit. 2 / H315	Skin corrosion/irritation	Causes skin irritation.
Eye Irrit. 2 / H319	Serious eye damage/eye irritation	Causes serious eye irritation.
STOT SE 3 / H335	STOT-single exposure	May cause respiratory irritation.
Muta. 2 / H341	Germ cell mutagenicity	Suspected of causing genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
Acute Tox. 3 / H331	Acute toxicity (inhalative)	Toxic if inhaled.
Acute Tox. 3 / H311	Acute toxicity (dermal)	Toxic in contact with skin.
Acute Tox. 3 / H301	Acute toxicity (oral)	Toxic if swallowed.
STOT RE 2 / H373	STOT-repeated exposure	May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

Classification procedure

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Acute Tox. 4	Acute toxicity (oral)	Calculation method.
Skin Corr. 1B	Skin corrosion/irritation	Calculation method.
Eye Dam. 1	Serious eye damage/eye irritation	Calculation method.
Skin Sens. 1	Respiratory or skin sensitisation	Calculation method.
Muta. 2	Germ cell mutagenicity	Calculation method.
Aquatic Chronic 2	Hazardous to the aquatic environment	Calculation method.

Abbreviations and acronyms

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
OEL	Occupational Exposure Limit Value
BLV	Biological Limit Value
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	Carcinogenic, Mutagenic and Reprotoxic
DIN	German Institute for Standardization / German industrial standard
DNEL	Derived No-Effect Level
EAKV	European Waste Catalogue Directive
EC	Effective Concentration
EC	European Community
EN	European Standard
IATA-DGR	International Air Transport Association – Dangerous Goods Regulations
IBC Code	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
ICAO-TI	International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG Code	International Maritime Code for Dangerous Goods
ISO	International Organization for Standardization
LC	Lethal Concentration
LD	Lethal Dose
MARPOL	Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OECD	Organisation for Economic Cooperation and Development
PBT	persistent, bioaccumulative, toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
UN	United Nations
VOC	Volatile Organic Compounds
vPvB	very persistent and very bioaccumulative

Abbreviations and acronyms

n.a. = not applicable
n.b. = not determined

Further information

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

The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and

EU regulations.Without written approval, the product must not be used for purposes different from those mentioned in section 1.It is always the user's duty to take any necessary measures for meeting the requirements laid down by local rules and regulations.The details in this safety data sheet describe the safety requirements of our product and are not to be regarded as guaranteed attributes of the product.