1.1. Product identifier

VITAVM LC SEPARATOR

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

Use of the substance/mixture
Use as laboratory reagent

1.3. Details of the supplier of the safety data sheet

Company name: VITA Zahnfabrik H.Rauter GmbH & Co.KG
Post-office box: 1338
79704 Bad Säckingen
Telephone: +49(0)7761-562-0
Telefax: +49(0)7761-562-299
E-mail: info@vita-zahnfabrik.com
Internet: www.vita-zahnfabrik.com

1.4. Emergency telephone number:

+49-(0)761-19240

 SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Flammable liquid: Flam. Liq. 2
Aspiration hazard: Asp. Tox. 1
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Dam. 1
Reproductive toxicity: Repr. 2
Specific target organ toxicity - single exposure: STOT SE 3
Specific target organ toxicity - repeated exposure: STOT RE 2
Hazardous to the aquatic environment: Aquatic Acute 1
Hazardous to the aquatic environment: Aquatic Chronic 1

Hazard Statements:
Highly flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Causes serious eye damage.
Suspected of damaging the unborn child.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling
toluene
cyclohexane
methyisilanetriyl triacetat

Signal word: Danger
Hazard statements

- H225: Highly flammable liquid and vapour.
- H304: May be fatal if swallowed and enters airways.
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- H336: May cause drowsiness or dizziness.
- H361d: Suspected of damaging the unborn child.
- H373: May cause damage to organs through prolonged or repeated exposure.
- H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements

- P273: Avoid release to the environment.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P351+P338: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P331: Do NOT induce vomiting.
- P391: Collect spillage.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-82-7</td>
<td>cyclohexane</td>
<td>50 - &lt; 55 %</td>
</tr>
<tr>
<td>108-88-3</td>
<td>toluene</td>
<td>10 - &lt; 15 %</td>
</tr>
<tr>
<td>4253-34-3</td>
<td>methyilsilanetriyl triacetat</td>
<td>1 - &lt; 5 %</td>
</tr>
<tr>
<td>1067-33-0</td>
<td>dibutyltin diacetate</td>
<td>&lt; 1 %</td>
</tr>
</tbody>
</table>

Full text of H and EUH statements: see section 16.
4.1. Description of first aid measures

After inhalation
Provide fresh air. Medical treatment necessary.

After contact with skin
After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

After contact with eyes
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion
Observe risk of aspiration if vomiting occurs.

4.2. Most important symptoms and effects, both acute and delayed
No information available.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
Carbon dioxide (CO2), Foam, Extinguishing powder.

Unsuitable extinguishing media
Water.

5.2. Special hazards arising from the substance or mixture
Highly flammable. Vapours can form explosive mixtures with air.

5.3. Advice for firefighters
Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information
Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions
Do not allow uncontrolled discharge of product into the environment. Explosion risk.

6.3. Methods and material for containment and cleaning up
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections
Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Advice on safe handling
If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion
Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Vapours can form explosive mixtures with air.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints on joint storage
Do not store together with: Oxidizing agent. Pyrophoric or self-heating substances.

7.3. Specific end use(s)
Use as laboratory reagent

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>ppm</th>
<th>mg/m³</th>
<th>fibres/ml</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-82-7</td>
<td>Cyclohexane</td>
<td>100</td>
<td>350</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>300</td>
<td>1050</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
<tr>
<td>108-88-3</td>
<td>Toluene</td>
<td>50</td>
<td>191</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>384</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls
If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures
Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

Eye/face protection
Suitable eye protection: goggles.

Hand protection
When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Recommended glove articles KCL Dermatril P Breakthrough time (maximum wearing time) 60 min NBR (Nitrile rubber)
Skin protection
Flame-retardant protective clothing. Wear anti-static footwear and clothing Wear suitable protective clothing.

Respiratory protection
In case of inadequate ventilation wear respiratory protection. Technical ventilation of workplace Provide adequate ventilation as well as local exhaustion at critical locations.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>translucent</td>
<td></td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
<td></td>
</tr>
<tr>
<td>pH-Value</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Changes in the physical state</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting point</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>77 °C</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>&lt; 5 °C</td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The product is not: Explosive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower explosion limits:</td>
<td>1,2 vol. %</td>
<td></td>
</tr>
<tr>
<td>Upper explosion limits:</td>
<td>8,3 vol. %</td>
<td></td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>260 °C</td>
<td>DIN 51794</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not oxidising</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt;=1100 hPa</td>
<td></td>
</tr>
<tr>
<td>(at 50 °C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>0,86700 g/cm³</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient:</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Vapour density</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Solid content</td>
<td>0,0 %</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 10: Stability and reactivity

...
10.1. Reactivity
Highly flammable.

10.2. Chemical stability
The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions
No known hazardous reactions.

10.4. Conditions to avoid
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

10.5. Incompatible materials
No information available.

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Exposure route</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>110-82-7</td>
<td>cyclohexane</td>
<td>dermal</td>
<td>LD50</td>
<td>12705</td>
<td></td>
<td></td>
</tr>
<tr>
<td>108-88-3</td>
<td>toluene</td>
<td>dermal</td>
<td>LD50</td>
<td>12200</td>
<td>Rabbit</td>
<td>GESTIS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalation (4 h)</td>
<td>LC50</td>
<td>49 mg/l</td>
<td>Rat</td>
<td>GESTIS</td>
</tr>
<tr>
<td>4253-34-3</td>
<td>methysilanetriyl triacetate</td>
<td>oral</td>
<td>ATE</td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1067-33-0</td>
<td>dibutyltin diacetate</td>
<td>oral</td>
<td>LD50</td>
<td>32 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>2320</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Irritation and corrosivity
Causes skin irritation.
Causes serious eye damage.

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

Carcinogenic/mutagenic/toxic effects for reproduction
Suspected of damaging the unborn child. (toluene)
Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.

STOT-single exposure
May cause drowsiness or dizziness. (cyclohexane)

STOT-repeated exposure
May cause damage to organs through prolonged or repeated exposure. (toluene)
Aspiration hazard
May be fatal if swallowed and enters airways.

Additional information on tests
The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

SECTION 12: Ecological information

12.1. Toxicity
Very toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Aquatic toxicity</th>
<th>Dose</th>
<th>[h]</th>
<th>[d]</th>
<th>Species</th>
<th>Source</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>108-88-3</td>
<td>toluene</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>13 mg/l</td>
<td>96 h</td>
<td>Carassius auratus</td>
<td>IUCLID</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute algae toxicity</td>
<td>ErC50</td>
<td>12.5 mg/l</td>
<td>72 h</td>
<td></td>
<td>GESTIS</td>
<td></td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
The product has not been tested.

12.3. Bioaccumulative potential
The product has not been tested.

Partition coefficient n-octanol/water

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>108-88-3</td>
<td>toluene</td>
<td>2.73</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
The product has not been tested.

12.5. Results of PBT and vPvB assessment
The product has not been tested.

12.6. Other adverse effects
No information available.

Further information
Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Disposal recommendations
Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Contaminated packaging
Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (cyclohexane)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3

Classification code: F1
Special Provisions: 274 601 640D
Limited quantity: 1 L
Excepted quantity: E2
Transport category: 2
Hazard No: 33
Tunnel restriction code: D/E

Inland waterways transport (ADN)
14.1. UN number: UN 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (cyclohexane)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3

Marine transport (IMDG)
14.1. UN number: UN 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (cyclohexane)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3

Air transport (ICAO-TI/IATA-DGR)
14.1. UN number: UN 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (cyclohexane)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3

Special Provisions: A3
Limited quantity Passenger: 1 L
14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: yes

Danger releasing substance: cyclohexane

14.6. Special precautions for user

Warning: Combustible liquid.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 48: toluene
Entry 57: cyclohexane

2010/75/EU (VOC): 10 % (86,7 g/l)
2004/42/EC (VOC): 10 % (86,7 g/l)
Information according to 2012/18/EU (SEVESO III):
E1 Hazardous to the Aquatic Environment

Additional information: P5c

National regulatory information

Employment restrictions:
Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 2 - obviously hazardous to water

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
CLP: Classification, labelling and Packaging
Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

<table>
<thead>
<tr>
<th>Classification</th>
<th>Classification procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 2; H225</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>Asp. Tox. 1; H304</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Skin Irrit. 2; H315</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Eye Dam. 1; H318</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Repr. 2; H361d</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3; H336</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT RE 2; H373</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Acute 1; H400</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 1; H410</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

Relevant H and EUH statements (number and full text)

- H225: Highly flammable liquid and vapour.
- H300: Fatal if swallowed.
- H302: Harmful if swallowed.
- H304: May be fatal if swallowed and enters airways.
- H314: Causes severe skin burns and eye damage.
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.
- H336: May cause drowsiness or dizziness.
- H361d: Suspected of damaging the unborn child.
- H373: May cause damage to organs through prolonged or repeated exposure.
- H400: Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
EUH014 Reacts violently with water.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)