Annex - Exposure Scenario

Summary of Exposure Scenarios

The annex is part of the safety data sheet. Separate page numbering is due to technical reasons.

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Professional use, Lubricants, greases, release products

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Professional use, Washing and cleaning products (including solvent based
products)

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ES 1
1. Short title of Exposure Scenario:
Manufacture

Main User Groups
: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use
: SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
Chemical product category
: PC19: Intermediate
PC35: Washing and cleaning products (including solvent based products)
Process categories
: PROC2: Use in closed, continuous process with occasional controlled exposure
Environmental Release Categories
: ERC1: Manufacture of substances
Remarks
: In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC2

Product characteristics
Concentration of the Substance in Mixture/Article
: Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use)
: liquid
Frequency and duration of use/exposure
End Use
: Indoor activities
Other operational conditions affecting workers exposure
Risk Management Measures
Engineering measures
: Use with local exhaust ventilation.
Personal protective measures
: Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source

Health

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC2</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,097 mg/m³</td>
<td>0,014</td>
</tr>
<tr>
<td>PROC2</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,137 mg/kg bw/day</td>
<td>0,014</td>
</tr>
</tbody>
</table>
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
ES 2

1. Short title of Exposure Scenario:
Formulation, Manufacture of plastics products, including compounding and conversion

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use : SU12: Manufacture of plastics products, including compounding and conversion
Chemical product category : PC15: Non-metal-surface treatment products
                          : PC32: Polymer preparations and compounds
Process categories : PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
Environmental Release Categories : ERC3: Formulation in materials
Remarks : In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for:
PROC5

Product characteristics
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : liquid

Frequency and duration of use/exposure
End Use : Indoor activities

Other operational conditions affecting workers exposure

Risk Management Measures
Engineering measures : Use with local exhaust ventilation.
Personal protective measures : Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.484 mg/m³</td>
<td>0.069</td>
</tr>
<tr>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 99% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.137 mg/kg bw/day</td>
<td>0.014</td>
</tr>
</tbody>
</table>
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
ES 3
1. Short title of Exposure Scenario:
Industrial use, Manufacture of computer, electronic and optical products, electrical equipment

Main User Groups: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Sectors of end-use: SU16: Manufacture of computer, electronic and optical products, electrical equipment

Process categories: PROC13: Treatment of articles by dipping and pouring

Environmental Release Categories: ERC5: Industrial use resulting in inclusion into or onto a matrix
ERC7: Industrial use of substances in closed systems

Remarks: In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for:
PROC13

Product characteristics
Concentration of the Substance in Mixture/Article: Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use): liquid

Frequency and duration of use/exposure
End Use: Indoor activities

Risk Management Measures
Engineering measures: Use with local exhaust ventilation.
Personal protective measures: Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source

<table>
<thead>
<tr>
<th>Health</th>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PROC13</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency. Resirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.968 mg/m³</td>
<td>0.138</td>
</tr>
<tr>
<td></td>
<td>PROC13</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.686 mg/kg bw/day</td>
<td>0.071</td>
</tr>
</tbody>
</table>
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
ES 4

1. Short title of Exposure Scenario:
Industrial use, Adhesives, sealants

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use : SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
Chemical product category : PC1: Adhesives, sealants
Process categories : PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
 : PROC7: Industrial spraying
Environmental Release Categories : ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Remarks : In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for:
PROC5
PROC7

Product characteristics
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : liquid

Frequency and duration of use/exposure
End Use : Indoor activities

Other operational conditions affecting workers exposure
Risk Management Measures
Engineering measures : Use with local exhaust ventilation.
Personal protective measures : Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source

<table>
<thead>
<tr>
<th>Health</th>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.484 mg/m³</td>
<td>0.069</td>
</tr>
<tr>
<td></td>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 99% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.069 mg/kg bw/day</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>PROC7</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, inhalative</td>
<td>0.346 mg/m³</td>
<td>0.048</td>
</tr>
</tbody>
</table>
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
1. Short title of Exposure Scenario:
Formulation, Lubricants, greases, release products

Main User Groups
- SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Sectors of end-use
- SU 10: Formulation

Chemical product category
- PC17: Hydraulic fluids
- PC24: Lubricants, greases, release products
- PC25: Metal working fluids

Process categories
- PROC1: Use in closed process, no likelihood of exposure
- PROC2: Use in closed, continuous process with occasional controlled exposure
- PROC3: Use in closed batch process (synthesis or formulation)
- PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
- PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
- PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
- PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
- PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
- PROC15: Use as laboratory reagent

Environmental Release Categories
- ERC2: Formulation of preparations

Remarks
In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for:
PROC1

Product characteristics
Concentration of the Substance in Mixture/Article
- Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use)
- liquid

Frequency and duration of use/exposure
End Use
- Indoor activities

Additional good practice advice beyond the REACH Chemical Safety Assessment

2.2 Contributing scenario controlling worker exposure for:
PROC2
PROC3
### Product characteristics
- **Concentration of the Substance in Mixture/Article**: Covers the percentage of the substance in the product up to 100 % (unless stated differently).
- **Physical Form (at time of use)**: liquid

### Frequency and duration of use/exposure
- **End Use**: Indoor activities

### Risk Management Measures
- **Engineering measures**: Use with local exhaust ventilation.
- **Personal protective measures**: Wear suitable respiratory protection with adequate efficiency.

### 3. Exposure estimation and reference to its source

#### Health

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC1</td>
<td>ECETOC TRA</td>
<td>long term, inhalative, systemic</td>
<td>0,014 mg/m³</td>
<td>0,002</td>
<td></td>
</tr>
<tr>
<td>PROC1</td>
<td>ECETOC TRA</td>
<td>long term, dermal, systemic</td>
<td>0,036 mg/kg bw/day</td>
<td>0,004</td>
<td></td>
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<tr>
<td>PROC2</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,014 mg/m³</td>
<td>0,014</td>
</tr>
<tr>
<td>PROC2</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,014 mg/kg bw/day</td>
<td>0,014</td>
</tr>
<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,042 mg/m³</td>
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<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,004 mg/kg bw/day</td>
<td>0,004</td>
</tr>
<tr>
<td>PROC4</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,069 mg/m³</td>
<td>0,069</td>
</tr>
<tr>
<td>PROC4</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,071 mg/kg bw/day</td>
<td>0,071</td>
</tr>
<tr>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,069 mg/m³</td>
<td>0,069</td>
</tr>
<tr>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,007 mg/kg bw/day</td>
<td>0,007</td>
</tr>
<tr>
<td>PROC8a</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,138 mg/m³</td>
<td>0,138</td>
</tr>
<tr>
<td>PROC8a</td>
<td>ECETOC TRA</td>
<td>LEV: 99% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,014 mg/kg bw/day</td>
<td>0,014</td>
</tr>
<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 97% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,021 mg/m³</td>
<td>0,021</td>
</tr>
<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,071 mg/kg bw/day</td>
<td>0,071</td>
</tr>
</tbody>
</table>
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
ES 6

1. Short title of Exposure Scenario:
Industrial use, Lubricants, greases, release products

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Chemical product category : PC1: Adhesives, sealants
PC17: Hydraulic fluids
PC24: Lubricants, greases, release products
PC31: Polishes and wax blends

Process categories : PROC2: Use in closed, continuous process with occasional controlled exposure
PROC7: Industrial spraying
PROC8b: Transfer of substance or preparation (charging/ discharging) from/to vessels/large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10: Roller application or brushing
PROC13: Treatment of articles by dipping and pouring
PROC17: Lubrication at high energy conditions and in partly open process
PROC18: Greasing at high energy conditions

Environmental Release Categories : ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
ERC7: Industrial use of substances in closed systems

Remarks : In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/ vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for:
PROC1

Product characteristics
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : liquid

Frequency and duration of use/exposure

Other operational conditions affecting workers exposure
End Use : Indoor activities

Additional good practice advice beyond the REACH Chemical Safety Assessment
Additional good practice advice : Follow good work practice and refer to chapter 8 of the SDS for resulting RMMs.

2.2 Contributing scenario controlling worker exposure for:
PROC2
PROC7
PROC8b
PROC9
**EC-SAFETY DATA SHEET**

**BENZENE, C10-13-ALKYL DERIVS.**

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**Product characteristics**

Concentration of the Substance in Mixture/Article: Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use): liquid

**Frequency and duration of use/exposure**

**Other operational conditions affecting workers exposure**

End Use: Indoor activities

**Risk Management Measures**

Engineering measures: Use with local exhaust ventilation.

Personal protective measures: Wear suitable respiratory protection with adequate efficiency.

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### 3. Exposure estimation and reference to its source

#### Health

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC1</td>
<td>ECETOC TRA</td>
<td>long term, inhalative, systemic</td>
<td>0,014 mg/m³</td>
<td>0,002</td>
<td></td>
</tr>
<tr>
<td>PROC1</td>
<td>ECETOC TRA</td>
<td>long term, dermal, systemic</td>
<td>0,036 mg/kg bw/day</td>
<td>0,004</td>
<td></td>
</tr>
<tr>
<td>PROC2</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>0,098 mg/m³</td>
<td>0,014</td>
<td></td>
</tr>
<tr>
<td>PROC2</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,137 mg/kg bw/day</td>
<td>0,014</td>
</tr>
<tr>
<td>PROC7</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>2,421 mg/m³</td>
<td>0,346</td>
<td></td>
</tr>
<tr>
<td>PROC7</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>2,143 mg/kg bw/day</td>
<td>0,223</td>
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<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 97% efficiency, Respirator: 90% protection</td>
<td>0,147 mg/m³</td>
<td>0,021</td>
<td></td>
</tr>
<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,686 mg/kg bw/day</td>
<td>0,071</td>
</tr>
<tr>
<td>PROC9</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>0,483 mg/m³</td>
<td>0,069</td>
<td></td>
</tr>
<tr>
<td>PROC9</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,686 mg/kg bw/day</td>
<td>0,071</td>
</tr>
<tr>
<td>PROC10</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>0,968 mg/m³</td>
<td>0,138</td>
<td></td>
</tr>
<tr>
<td>PROC10</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency</td>
<td>long term, dermal, systemic</td>
<td>1371 mg/kg bw/day</td>
<td>0,143</td>
</tr>
<tr>
<td>PROC13</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>0,968 mg/m³</td>
<td>0,138</td>
<td></td>
</tr>
<tr>
<td>PROC13</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,686 mg/kg bw/day</td>
<td>0,071</td>
</tr>
<tr>
<td>PROC17</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency, Respirator: 90% protection</td>
<td>0,968 mg/m³</td>
<td>0,138</td>
<td></td>
</tr>
</tbody>
</table>
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
1. Short title of Exposure Scenario:
Formulation, Metal working fluids

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Chemical product category : PC7: Base metals and alloys
PC25: Metal working fluids
Process categories : PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
Environmental Release Categories : ERC2: Formulation of preparations
Remarks : In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (EnvironmentalHazard Assessment) and section 4 (PBT/ vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for: All PROCs

Product characteristics
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : liquid

Frequency and duration of use/exposure
Other operational conditions affecting workers exposure
End Use : Indoor activities

Risk Management Measures
Engineering measures : Use with local exhaust ventilation.
Personal protective measures : Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source

<table>
<thead>
<tr>
<th>Health</th>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,484 mg/m³</td>
<td>0,069</td>
</tr>
<tr>
<td></td>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 99% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,069 mg/kg bw/day</td>
<td>0,007</td>
</tr>
<tr>
<td></td>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 97% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,145 mg/m³</td>
<td>0,021</td>
</tr>
</tbody>
</table>
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
1. Short title of Exposure Scenario: Professional use, Metal working fluids

Main User Groups: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Chemical product category:
- PC7: Base metals and alloys
- PC25: Metal working fluids

Process categories:
- PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
- PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
- PROC17: Lubrication at high energy conditions and in partly open process

Environmental Release Categories:
- ERC8b: Wide dispersive indoor use of reactive substances in open systems
- ERC9b: Wide dispersive outdoor use of substances in closed systems

Remarks: In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for: All PROCs

Product characteristics
Concentration of the Substance in Mixture/Article: Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use): liquid

Frequency and duration of use/exposure
End Use: Indoor activities

Other operational conditions affecting workers exposure

Risk Management Measures
Engineering measures: Use with local exhaust ventilation.
Personal protective measures: Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source

Health

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,986 mg/m³</td>
<td>0,138</td>
</tr>
<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,686 mg/kg bw/day</td>
<td>0,071</td>
</tr>
<tr>
<td>PROC9</td>
<td>ECETOC TRA</td>
<td>LEV: 80% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>1.937 mg/m³</td>
<td>0.277</td>
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<tr>
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<td>------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------</td>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td>PROC9</td>
<td>ECETOC TRA</td>
<td>LEV: 80% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.686 mg/kg bw/day</td>
<td>0.071</td>
</tr>
<tr>
<td>PROC17</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>4.842 mg/m³</td>
<td>0.692</td>
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<tr>
<td>PROC17</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency</td>
<td>long term, dermal, systemic</td>
<td>1.371 mg/kg bw/day</td>
<td>0.143</td>
</tr>
</tbody>
</table>

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
ES 9
1. Short title of Exposure Scenario:
   Professional use, Coatings and paints, thinners, paint removers

   Main User Groups: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

   Chemical product category: PC9a: Coatings and paints, thinners, paint removers

   Process categories:
   - PROC2: Use in closed, continuous process with occasional controlled exposure
   - PROC3: Use in closed batch process (synthesis or formulation)
   - PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
   - PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
   - PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
   - PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
   - PROC10: Roller application or brushing
   - PROC11: Non industrial spraying

   Environmental Release Categories:
   - ERC8b: Wide dispersive indoor use of reactive substances in open systems
   - ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix

   Remarks: In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for:
   All PROCs

   Product characteristics
   - Concentration of the Substance in Mixture/Article: Covers the percentage of the substance in the product up to 100 % (unless stated differently).
   - Physical Form (at time of use): liquid

   Frequency and duration of use/exposure
   - End Use: Indoor activities

   Risk Management Measures
   - Engineering measures: Use with local exhaust ventilation.
   - Personal protective measures: Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source

   Health

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
</table>

Print Date 04.11.2014
Annex Benzene, C10-13-alkyl derivs.
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
ES 10

1. Short title of Exposure Scenario:
Industrial use, Paper and board dye, finishing and impregnation products: including bleaches and other processing aids

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use :SU6b: Manufacture of pulp, paper and paper products
Chemical product category :PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids

Process categories : PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC7: Industrial spraying
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10: Roller application or brushing

Environmental Release Categories : ERC6b: Industrial use of reactive processing aids
ERC11a: Wide dispersive indoor use of long-life articles and materials with low release

Remarks : In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for:
All PROCs

Product characteristics
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : liquid

Frequency and duration of use/exposure

Other operational conditions affecting workers exposure
End Use : Indoor activities

Risk Management Measures
Engineering measures : Use with local exhaust ventilation.
Personal protective measures : Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source
### Health

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC2</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.097 mg/m³</td>
<td>0.014</td>
</tr>
<tr>
<td>PROC2</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.137 mg/kg bw/day</td>
<td>0.014</td>
</tr>
<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.291 mg/m³</td>
<td>0.042</td>
</tr>
<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.034 mg/kg bw/day</td>
<td>0.004</td>
</tr>
<tr>
<td>PROC4</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.484 mg/m³</td>
<td>0.069</td>
</tr>
<tr>
<td>PROC4</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.686 mg/kg bw/day</td>
<td>0.071</td>
</tr>
<tr>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.484 mg/m³</td>
<td>0.069</td>
</tr>
<tr>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 99% efficiency</td>
<td>long term, inhalative, systemic</td>
<td>0.069 mg/kg bw/day</td>
<td>0.007</td>
</tr>
<tr>
<td>PROC7</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>2.421 mg/m³</td>
<td>0.346</td>
</tr>
<tr>
<td>PROC7</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency</td>
<td>long term, dermal, systemic</td>
<td>2.143 mg/kg bw/day</td>
<td>0.223</td>
</tr>
<tr>
<td>PROC8a</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.968 mg/m³</td>
<td>0.138</td>
</tr>
<tr>
<td>PROC8a</td>
<td>ECETOC TRA</td>
<td>LEV: 99% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.137 mg/kg bw/day</td>
<td>0.014</td>
</tr>
<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 97% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.145 mg/m³</td>
<td>0.021</td>
</tr>
<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.686 mg/kg bw/day</td>
<td>0.071</td>
</tr>
<tr>
<td>PROC9</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.484 mg/m³</td>
<td>0.069</td>
</tr>
<tr>
<td>PROC9</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.686 mg/kg bw/day</td>
<td>0.071</td>
</tr>
<tr>
<td>PROC10</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.968 mg/m³</td>
<td>0.138</td>
</tr>
<tr>
<td>PROC10</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency</td>
<td>long term, dermal, systemic</td>
<td>1.371 mg/kg bw/day</td>
<td>0.143</td>
</tr>
</tbody>
</table>

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
ES 11

1. Short title of Exposure Scenario:
   Industrial use, Cosmetics, personal care products

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use : SU9: Manufacture of fine chemicals
Chemical product category : PC39: Cosmetics, personal care products
Process categories : PROC2: Use in closed, continuous process with occasional controlled exposure
                     PROC3: Use in closed batch process (synthesis or formulation)
                     PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
                     PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
                     PROC7: Industrial spraying
                     PROC8a: Transfer of substance or preparation (charging/ discharging) from/to vessels/large containers at non-dedicated facilities
                     PROC8b: Transfer of substance or preparation (charging/ discharging) from/to vessels/large containers at dedicated facilities
                     PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Environmental Release Categories : ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
Remarks : In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/ vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for:
All PROCs

Product characteristics
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : liquid

Frequency and duration of use/exposure
End Use : Indoor activities

Risk Management Measures
Engineering measures : Use with local exhaust ventilation.
Personal protective measures : Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source

Health
### Contributing Scenario

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.291 mg/m³</td>
<td>0.042</td>
</tr>
<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.034 mg/kg bw/day</td>
<td>0.004</td>
</tr>
<tr>
<td>PROC4</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.484 mg/m³</td>
<td>0.069</td>
</tr>
<tr>
<td>PROC4</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.686 mg/kg bw/day</td>
<td>0.071</td>
</tr>
<tr>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.484 mg/m³</td>
<td>0.069</td>
</tr>
<tr>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 99% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.069 mg/kg bw/day</td>
<td>0.007</td>
</tr>
<tr>
<td>PROC7</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency, Respirator: 95% protection</td>
<td>long term, inhalative, systemic</td>
<td>2.421 mg/m³</td>
<td>0.346</td>
</tr>
<tr>
<td>PROC7</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency</td>
<td>long term, dermal, systemic</td>
<td>2.143 mg/kg bw/day</td>
<td>0.223</td>
</tr>
<tr>
<td>PROC8a</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.968 mg/m³</td>
<td>0.138</td>
</tr>
<tr>
<td>PROC8a</td>
<td>ECETOC TRA</td>
<td>LEV: 99% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.137 mg/kg bw/day</td>
<td>0.014</td>
</tr>
<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 97% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.145 mg/m³</td>
<td>0.021</td>
</tr>
<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.686 mg/kg bw/day</td>
<td>0.071</td>
</tr>
<tr>
<td>PROC9</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.484 mg/m³</td>
<td>0.069</td>
</tr>
<tr>
<td>PROC9</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.686 mg/kg bw/day</td>
<td>0.071</td>
</tr>
</tbody>
</table>

4. **Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

**Health**

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
**ES 12**

1. **Short title of Exposure Scenario:**

   Industrial use, Polymer preparations and compounds

<table>
<thead>
<tr>
<th>Main User Groups</th>
<th>SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical product category</td>
<td>PC32: Polymer preparations and compounds</td>
</tr>
<tr>
<td>Process categories</td>
<td>PROC2: Use in closed, continuous process with occasional controlled exposure</td>
</tr>
<tr>
<td></td>
<td>PROC3: Use in closed batch process (synthesis or formulation)</td>
</tr>
<tr>
<td></td>
<td>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</td>
</tr>
<tr>
<td></td>
<td>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</td>
</tr>
<tr>
<td></td>
<td>PROC7: Industrial spraying</td>
</tr>
<tr>
<td></td>
<td>PROC8a: Transfer of substance or preparation (charging/ discharging) from/to vessels/large containers at non-dedicated facilities</td>
</tr>
<tr>
<td></td>
<td>PROC8b: Transfer of substance or preparation (charging/ discharging) from/to vessels/large containers at dedicated facilities</td>
</tr>
<tr>
<td></td>
<td>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</td>
</tr>
<tr>
<td></td>
<td>PROC10: Roller application or brushing</td>
</tr>
<tr>
<td>Environmental Release Categories</td>
<td>ERC6c: Industrial use of monomers for manufacture of thermoplastics</td>
</tr>
<tr>
<td></td>
<td>ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers</td>
</tr>
<tr>
<td></td>
<td>ERC11a: Wide dispersive indoor use of long-life articles and materials with low release</td>
</tr>
<tr>
<td></td>
<td>ERC11b: Wide dispersive indoor use of long-life articles and materials with high or intended release (including abrasive processing)</td>
</tr>
<tr>
<td>Remarks</td>
<td>In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT / vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.</td>
</tr>
</tbody>
</table>

**2.2 Contributing scenario controlling worker exposure for:**

   **All PROCs**

<table>
<thead>
<tr>
<th>Product characteristics</th>
<th>Concentration of the Substance in Mixture/Article</th>
<th>Covers the percentage of the substance in the product up to 100% (unless stated differently).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Physical Form (at time of use)</td>
<td>liquid</td>
</tr>
<tr>
<td>Frequency and duration of use/exposure</td>
<td>End Use</td>
<td>Indoor activities</td>
</tr>
<tr>
<td>Other operational conditions affecting workers exposure</td>
<td>Risk Management Measures</td>
<td>Engineering measures</td>
</tr>
<tr>
<td>Personal protective measures</td>
<td></td>
<td>Wear suitable respiratory protection with adequate efficiency.</td>
</tr>
</tbody>
</table>

**3. Exposure estimation and reference to its source**

Print Date 04.11.2014
Annex Benzene, C10-13-alkyl derivs.
### Health

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC2</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
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<tr>
<td>PROC2</td>
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<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,137 mg/kg bw/day</td>
<td>0,014</td>
</tr>
<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,291 mg/m³</td>
<td>0,042</td>
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<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,034 mg/kg bw/day</td>
<td>0,004</td>
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<td>PROC4</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,484 mg/m³</td>
<td>0,069</td>
</tr>
<tr>
<td>PROC4</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,686 mg/kg bw/day</td>
<td>0,071</td>
</tr>
<tr>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,484 mg/m³</td>
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<td>long term, dermal, systemic</td>
<td>0,069 mg/kg bw/day</td>
<td>0,007</td>
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<tr>
<td>PROC7</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>2,421 mg/m³</td>
<td>0,346</td>
</tr>
<tr>
<td>PROC7</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency</td>
<td>long term, dermal, systemic</td>
<td>2,143 mg/kg bw/day</td>
<td>0,223</td>
</tr>
<tr>
<td>PROC8a</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,968 mg/m³</td>
<td>0,138</td>
</tr>
<tr>
<td>PROC8a</td>
<td>ECETOC TRA</td>
<td>LEV: 99% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,137 mg/kg bw/day</td>
<td>0,014</td>
</tr>
<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 97% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0,145 mg/m³</td>
<td>0,021</td>
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<tr>
<td>PROC8b</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0,686 mg/kg bw/day</td>
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<td>PROC9</td>
<td>ECETOC TRA</td>
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<td>PROC10</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency</td>
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4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
ES 13

1. Short title of Exposure Scenario:
Industrial use, Textile dyes, finishing and impregnating products; including bleaches and other processing aids

Main User Groups: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use: SU5: Manufacture of textiles, leather, fur
Chemical product category: PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids

Process categories:
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC7: Industrial spraying
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10: Roller application or brushing

Environmental Release Categories: ERC10b: Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing)

Remarks: In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for:
All PROCs

Product characteristics:
Concentration of the Substance in Mixture/Article: Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use): liquid

Frequency and duration of use/exposure:
End Use: Indoor activities

Risk Management Measures:
Engineering measures: Use with local exhaust ventilation.
Personal protective measures: Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source

Health
### Contributing Scenario

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<tr>
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### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
ES 14
1. Short title of Exposure Scenario:
Professional use, Ink and toners

Main User Groups : SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sectors of end-use : SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
Chemical product category : PC9a: Coatings and paints, thinners, paint removers
PC15: Non-metal-surface treatment products
PC18: Ink and toners
PC23: Leather tanning, dye, finishing, impregnation and care products
Process categories : PROC3: Use in closed batch process (synthesis or formulation)
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
PROC10: Roller application or brushing
PROC11: Non industrial spraying
Environmental Release Categories : ERC8b: Wide dispersive indoor use of reactive substances in open systems
ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix
ERC8d: Wide dispersive outdoor use of processing aids in open systems
ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Remarks : In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (EnvironmentalHazard Assessment) and section 4 (PBT/ vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimations not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for:
All PROCs

Product characteristics
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : liquid
Frequency and duration of use/exposure
End Use : Indoor activities

Risk Management Measures
Engineering measures : Use with local exhaust ventilation.
Personal protective measures : Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source

Health
## Contributing Scenario

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>LEV: 80% efficiency, Respirator: 90% protection</td>
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<td>PROC3</td>
<td>ECETOC TRA</td>
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<td>0.034 mg/kg bw/day</td>
<td>0.004</td>
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<td>PROC4</td>
<td>ECETOC TRA</td>
<td>LEV: 80% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>1.937 mg/m³</td>
<td>0.277</td>
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<tr>
<td>PROC4</td>
<td>ECETOC TRA</td>
<td>LEV: 90% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.686 mg/kg bw/day</td>
<td>0.071</td>
</tr>
<tr>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 80% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>1.937 mg/m³</td>
<td>0.277</td>
</tr>
<tr>
<td>PROC5</td>
<td>ECETOC TRA</td>
<td>LEV: 99% efficiency</td>
<td>long term, dermal, systemic</td>
<td>0.069 mg/kg bw/day</td>
<td>0.007</td>
</tr>
<tr>
<td>PROC10</td>
<td>ECETOC TRA</td>
<td>LEV: 80% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>4.842 mg/m³</td>
<td>0.692</td>
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<tr>
<td>PROC10</td>
<td>ECETOC TRA</td>
<td>LEV: 95% efficiency</td>
<td>long term, dermal, systemic</td>
<td>1.371 mg/kg bw/day</td>
<td>0.143</td>
</tr>
<tr>
<td>PROC11</td>
<td>ECETOC TRA</td>
<td>LEV: 80% efficiency, Respirator: 95% protection</td>
<td>long term, inhalative, systemic</td>
<td>5.81 mg/m³</td>
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<tr>
<td>PROC11</td>
<td>ECETOC TRA</td>
<td>LEV: 99% efficiency, Gloves: 90% protection</td>
<td>long term, dermal, systemic</td>
<td>0.214 mg/kg bw/day</td>
<td>0.022</td>
</tr>
</tbody>
</table>

### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

**Health**

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
## ES 15

### 1. Short title of Exposure Scenario:
**Professional use, Lubricants, greases, release products**

<table>
<thead>
<tr>
<th>Main User Groups</th>
<th>SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)</th>
</tr>
</thead>
</table>
| Chemical product category | PC1: Adhesives, sealants  
PC17: Hydraulic fluids  
PC24: Lubricants, greases, release products  
PC25: Metal working fluids  
PC31: Polishes and wax blends |
| Process categories | PROC1: Use in closed process, no likelihood of exposure  
PROC8a: Transfer of substance or preparation (charging/ discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/ discharging) from/to vessels/large containers at dedicated facilities  
PROC10: Roller application or brushing  
PROC11: Non industrial spraying  
PROC13: Treatment of articles by dipping and pouring  
PROC17: Lubrication at high energy conditions and in partly open process  
PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems |
| Environmental Release Categories | ERC8a: Wide dispersive indoor use of processing aids in open systems  
ERC8d: Wide dispersive outdoor use of processing aids in open systems  
ERC9a: Wide dispersive indoor use of substances in closed systems  
ERC9b: Wide dispersive outdoor use of substances in closed systems  
ERC10b: Wide dispersive outdoor use of long-life articles and materials with high or intended release (including abrasive processing) |
| Remarks | In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/ vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment. |

### 2.2 Contributing scenario controlling worker exposure for: PROC1

**Product characteristics**
- **Concentration of the Substance in Mixture/Article**: Covers the percentage of the substance in the product up to 100% (unless stated differently).
- **Physical Form (at time of use)**: liquid

**Frequency and duration of use/exposure**

**Other operational conditions affecting workers exposure**
- **End Use**: Indoor activities

**Additional good practice advice beyond the REACH Chemical Safety Assessment**
- **Additional good practice advice**: Follow good work practice and refer to chapter 8 of the SDS for resulting RMMs.

### 2.2 Contributing scenario controlling worker exposure for: PROC8a
**Product characteristics**

Concentration of the Substance in Mixture/Article: Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use): liquid

**Frequency and duration of use/exposure**

**Other operational conditions affecting workers exposure**

End Use: Indoor activities

**Risk Management Measures**

Engineering measures: Use with local exhaust ventilation.

Personal protective measures: Wear suitable respiratory protection with adequate efficiency.

### 3. Exposure estimation and reference to its source

#### Health

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
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<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC1</td>
<td>ECETOC TRA</td>
<td>long term, inhalative, systemic</td>
<td>0,014 mg/m³</td>
<td>0,002</td>
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<td>PROC1</td>
<td>ECETOC TRA</td>
<td>long term, dermal, systemic</td>
<td>0,036 mg/kg bw/day</td>
<td>0,004</td>
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</tr>
<tr>
<td>PROC8a</td>
<td>ECETOC TRA</td>
<td>LEV: 80% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>4,842 mg/m³</td>
<td>0,692</td>
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### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

**Health**

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
ES 16

1. Short title of Exposure Scenario:
Professional use, Washing and cleaning products (including solvent based products)

Main User Groups: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Sectors of end-use: SU9: Manufacture of fine chemicals

Chemical product category: PC35: Washing and cleaning products (including solvent based products)

Process categories:
- PROC3: Use in closed batch process (synthesis or formulation)
- PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
- PROC8a: Transfer of substance or preparation (charging/ discharging) from/to vessels/ large containers at non-dedicated facilities
- PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Environmental Release Categories:
- ERC8a: Wide dispersive indoor use of processing aids in open systems
- ERC8b: Wide dispersive indoor use of reactive substances in open systems

Remarks: In the chemical safety assessment performed according to Article 14(3) in connection with Annex I section 3 (Environmental Hazard Assessment) and section 4 (PBT/ vPvB Assessment) no hazard was identified. Therefore according to REACH Annex I (5.0) an exposure estimation is not necessary. Consequently all identified uses of the substance are considered as safe for the environment.

2.2 Contributing scenario controlling worker exposure for:
All PROCs

Product characteristics
- Concentration of the Substance in Mixture/Article: Covers the percentage of the substance in the product up to 100 % (unless stated differently).
- Physical Form (at time of use): liquid

Frequency and duration of use/exposure
- End Use: Indoor activities

Risk Management Measures
- Engineering measures: Use with local exhaust ventilation.
- Personal protective measures: Wear suitable respiratory protection with adequate efficiency.

3. Exposure estimation and reference to its source

Health

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value type</th>
<th>Level of Exposure</th>
<th>RCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>LEV: 80% efficiency, Respirator: 90% protection</td>
<td>long term, inhalative, systemic</td>
<td>0.581 mg/m³</td>
<td>0.083</td>
</tr>
</tbody>
</table>

Print Date 04.11.2014
Annex Benzene, C10-13-alkyl derivs.
4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Health

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.